

**FINAL REPORT  
FOR  
COMPREHENSIVE GROUNDWATER MONITORING EVALUATION  
AT  
BOYERTOWN SANITARY DISPOSAL LANDFILL  
GILBERTSVILLE, PENNSYLVANIA**

**PADEP CONTRACT NO. ME-359186  
WORK REQUISITION NO. 30-173**

*Submitted to:*



**Commonwealth of Pennsylvania  
Department of Environmental Protection  
Southeast Office  
Two East Main Street  
Norristown, PA 19041**



**United States Environmental Protection Agency  
Region III  
1650 Arch Street  
Philadelphia, PA 19103-2039**

**JULY 2005**



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***Prepared for:***

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Department of Environmental Protection  
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**JULY 2005**

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**NOTICE**

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**PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION**

**BOYERTOWN SANITARY DISPOSAL LANDFILL  
COMPREHENSIVE GROUND WATER MONITORING EVALUATION**

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## **1.0 GENERAL INFORMATION**

### **1.1 INTRODUCTION**

Tetra Tech EC, Inc. (TtEC) has prepared this Draft Report for the completion of a Comprehensive Groundwater Monitoring Evaluation (CME) for the Pennsylvania Department of Environmental Protection (PADEP) under PADEP Work Requisition Number 30-173 Contract Number ME-3591869, pursuant to the Pennsylvania Hazardous Sites Cleanup Act (HSCA) Act 108, October 18, 1988.

This document presents the data and data evaluation results as obtained through the split-sampling of groundwater, performed by TtEC and PADEP at the Boyertown Sanitary Disposal (BSD) Landfill in Gilbertsville, Pennsylvania.

### **1.2 SITE DESCRIPTION**

The BSD Landfill is owned by National Solid Waste Management Association (NSWMA) members, Mr. Warren K. Frame and Mr. Michael P. Miller. The BSD Landfill is located on approximately 100 acres at 300 Merkel Road in Gilbertsville, PA.

Figure 1 shows the location of the BSD Landfill. Figure 2 shows a facility plan view of the BSD Landfill including the locations of the 10 monitoring wells.

### **1.3 SITE HISTORY AND PREVIOUS SITE INVESTIGATIONS**

The BSD Landfill is a PADEP-permitted solid waste landfill that accepted municipal waste and some amount of hazardous waste during the 1970s through to 1985. The policy of the owner/operator of the landfill has been to dispose of only those wastes that are approved under the current solid waste permit and those approved jointly by PADEP, the Berks-Montgomery Municipal Authority, and the Landfill Engineer. In September 1997 the BSD Landfill was closed with the installation of a municipal solid waste landfill cover. These closure activities, which were performed by Solmax International, included the installation of a 30 mil (0.75 mm) poly vinyl chloride (PVC) cover over 1,600,000 ft<sup>2</sup> of the landfill.

The Commonwealth of Pennsylvania Court issued an order against the Chief Executive Officer of the BSD Landfill in September 1998. The order was in response to the failure to comply with the requirements of a 1997 PADEP Administrative Order. The court order required that a qualified environmental consultant be retained to assess the leachate management, gas management, and capping systems of the BSD Landfill. The court order also requires the completion of repairs and improvements required by the assessment to address environmentally harmful conditions by June 30, 1998.

The court order also required that quarterly groundwater monitoring resume no later than May 1, 1998 and continue thereafter. Requirements to sample raw and treated leachate were also imposed. Sampling was necessary to ensure consistency with the requirements of the Berks-

Montgomery Municipal Authority wastewater treatment plant that receives the leachate. Arrangements were also to be made with the authority for the on-going full disposal of leachate.

According to a June 18, 1999 listing in the Montgomery County Enforcement Actions, the Chief Executive Officer of the BSD Landfill failed to comply with the September 1997 court order and allowed post-closure conditions at the landfill to deteriorate over several years. Necessary actions included maintenance of the landfill's leachate system and gas flare equipment as well as submitting documentation to PADEP outlining leachate treatment and groundwater monitoring activities.

Trichloroethene (TCE) was detected in groundwater in the 1980s at concentrations as high as 68 parts per billion (ppb) in MW-1 (the garage well). More recent sampling events have shown a decrease in TCE concentrations. According to the Environmental Indicator determination completed at the BSD Landfill in 2000 by PADEP, the TCE contamination is not related to the landfill operation. Groundwater sampling at the BSD Landfill has not been on-going (conducted by the facility) as required by PADEP according to Southeast Regional Office PADEP staff. PADEP conducts CMEs at the facility on an annual basis.

According to a letter from Applied Geotechnical and Environmental Services (AGES) to PADEP dated June 18, 1998, an evaluation was performed of the landfill and its systems in accordance with the March 1998 Administrative Order. The evaluation contained the following description of the systems at the site:

- Leachate Management System – includes effluent pump house, air stripper, leachate treatment plant, clarifier and fixed film reactor, effluent lagoons A and B, raw leachate lagoon, and manholes.
- Gas Management System – includes gas burner, blower unit, and auto igniter.

The June 18, 1998 document also indicated that the owner of the landfill had excavated two trenches at the top of the landfill to recirculate leachate in the fall of 1995. In 1997, the BSD backfilled these two trenches. In 2001 there were reports of leachate seeps and landfill gas.

In 2004, TtEC conducted a site investigation at the landfill which consisted of following:

- Sampling of surface water from the Minister Creek (adjacent to the site)
- Monitoring of landfill gas at 10 of the 50 existing gas monitoring points previously installed by PADEP's Hazardous Site Cleanup Act (HSCA) program
- Monitoring of landfill gas at temporary points, which were installed by a TtEC subcontractor (biased to locations where odors have been historically noted)
- Evaluating the operation of the gas collection system, leachate collection/treatment system, and a visual inspection of the integrity of the landfill cover.
- Recommending whether repairs or modifications are necessary.

The results of this investigation can be found in TtEC's Site Investigation and Engineering Evaluation Report, dated June 2004.

## **1.4 CME OBJECTIVES**

The CME evaluates the adequacy of groundwater monitoring systems at RCRA land disposal facilities. The objective is to determine whether the facility has a groundwater monitoring system, which is adequately designed and operated to detect releases and to define the rate and extent of contaminant migration from a RCRA regulated unit. TtEC is not aware of any changes that have been made to the groundwater monitoring system at Boyertown Sanitary Disposal Landfill since the previous CME was conducted in April 2004.

## **2.0 CME SAMPLING EVENT**

In collaboration with PADEP's Southeast Regional Office, TtEC performed split-sampling at BSD Landfill on May 17 and 19, 2005. This sampling event consisted of the collection of groundwater samples from the following locations: AMW-1, SMW-1, MW-5, MW-6, MW-7, MW-8, MW-9, MW-10, MW-11, and MW-12. TtEC's monitoring well samples were analyzed for VOCs and metals (dissolved). PADEP's groundwater samples were analyzed for VOCs, metals (total and dissolved), and several other parameters. Additional water quality parameters were recorded. Duplicate, field blank, rinse blank and trip blank samples were also collected.

Prior to collection of the samples, a submersible pump and dedicated PVC tubing was used to purge each well for various volumes of water depending upon the depth of the wells. At the start of purging and following each well volume purged, parameters such as pH, temperature, conductivity, dissolved oxygen, and redox (water quality meter provided by TtEC) was measured and recorded in the field notebook. During purging activities, TtEC also monitored the change in the depth to water. Once the groundwater reached a stable state, samples were collected. Groundwater samples were collected directly from the pump into pre-preserved bottleware provided by the analytical laboratory. Purging records are shown in Appendix A.

## **2.1 CME SAMPLING EVENT RESULTS**

TtEC and PADEP sent the groundwater samples to their respective laboratories for analysis. Once the results for the samples were received, PADEP forwarded the lab results to TtEC for evaluation and comparison. During the comparison of these results, no notable differences were identified in the two sets of sampling results.

Monitoring well AMW-1 has historically been the sample location of concern. April 2003 sample results showed a trichloroethene concentration of 9 micrograms per liter (ug/L) in the groundwater at this location. The April 2004 sample results collected by TtEC indicated a trichloroethene concentration of 20 ug/l in the groundwater at this location. The May 2005 sampling results collected by TtEC indicate a trichloroethene reading of 26 ug/l. PADEP sampling data for AMW-1 supports TtEC's sampling data. PADEP's result for AMW-1 in April 2004 for trichloroethene was also 20 ug/l and PADEP's trichloroethene result in May 2005 is 19.6 ug/l. Furthermore, AMW-1 had shown concentrations of <1 ug/l for vinyl chloride, 1,1-dichloroethane, and methylene chloride in the April 2003 data and had shown a concentration of

1.9, 1.2 and 0.76 ug/L respectively in the April 2004 data. These three values are below PADEP Residential Medium-Specific Concentrations (MSCs) for Used Aquifer, Total Dissolved Solids (TDS) <2,500. During the May 2005 sampling event 1,1-dichloroethane and methylene chloride were not detected in the AMW-1 samples; however, vinyl chloride was detected at a concentration of 2.0 ug/l, which is equal to the PADEP MSC.

All other monitoring well locations have historically contained low to non-detect levels of VOCs and metals. However, TtEC's results show that thallium exceeded PADEP's MSC of 2.0 ug/l in MW-6 (4.87 ug/l) and MW-12 (9.84 ug/l). It should also be noted that PADEP sample results indicate that total lead exceeded the MSC of 5 ug/l in MW-5 (60.2 ug/l) and MW-11 (8.3 ug/l).

Manganese and iron exceeded PADEP's Secondary Contaminants MSCs in several wells.

PADEP laboratory results from the split-sampling event are presented in Appendix B of this report.

TtEC laboratory results from the split-sampling event are presented in Appendix C of this report.

## APPENDIX A

# COMPREHENSIVE GROUND-WATER MONITORING EVALUATION WORKSHEET

The following worksheets have been designed to assist the enforcement officer/technical reviewer in evaluating the ground-water monitoring system an owner/operator uses to collect and analyze samples of ground water. The focus of the worksheets is technical adequacy as it relates to obtaining and analyzing representative samples of ground water. The basis of the worksheets is the final RCRA Ground Water Monitoring Technical Enforcement Guidance Document which describes in detail the aspects of ground-water monitoring which EPA deems essential to meet the goals of RCRA. Appendix A is not a regulatory checklist. Specific technical deficiencies in the monitoring system can, however, be related to the regulations as illustrated in Figure 4.3 taken from the RCRA Ground-Water Monitoring Compliance Order Guide (COG) (included at the end of the appendix). The enforcement officer, in developing an enforcement order, should relate the technical assessment from the worksheets to the regulations using Figure 4.3 from the COG as a guide.

Comprehensive Ground-Water Monitoring Evaluation	Y/N
<b>I. Office Evaluation Technical Evaluation of the Design of the Ground-Water Monitoring System</b>	
<b>A. Review of Relevant Documents</b>	
1. What documents were obtained prior to conducting the inspection:	
a. RCRA Part A permit application?	Y
b. RCRA Part B permit application?	Y
c. Correspondence between the owner/operator and appropriate agencies or citizen's groups?	Y
d. Previously conducted facility inspection reports?	Y
e. Facility's contractor reports?	Y
f. Regional hydrogeologic, geologic, or soil reports?	Y
g. The facility's Sampling and Analysis Plan?	Y
h. Ground-water Assessment Program Outline (or Plan, if the facility is in assessment monitoring)?	Y
i. Other (specify) _____	Y



	Y/N
<b>B. Evaluation of the Owner/Operator's Hydrogeologic Assessment</b>	
1. Did the owner/operator use the following direct techniques in the hydrogeologic assessment:	
a. Logs of the soil borings/rock corings (documented by a professional geologist, soil scientist, or geotechnical engineer)?	
b. Materials tests (e.g., grain size analyses, standard penetration tests, etc.)?	N
c. Piezometer installation for water level measurements at different depths?	N
d. Slug tests?	
e. Pump tests?	
f. Geochemical analyses of soil samples?	
g. Other (specify) (e.g., hydrochemical diagrams and wash analysis)	
2. Did the owner/operator use the following indirect technique to supplement direct techniques data:	
a. Geophysical well logs?	
b. Tracer studies?	N/A
c. Resistivity and/or electromagnetic conductance?	N/A
d. Seismic Survey?	N/A
e. Hydraulic conductivity measurements of cores?	N/A
f. Aerial photography?	N/A
g. Ground penetrating radar?	N/A
h. Other (specify)	N/A
3. Did the owner/operator document and present the raw data from the site hydrogeologic assessment?	Y
4. Did the owner/operator document methods (criteria) used to correlate and analyze the information?	Y
5. The owner/operator prepare the following:	
a. Narrative description of geology?	Y
b. Geologic cross sections?	N
c. Geologic and soil maps?	N
d. Boring/coring logs?	Y
e. Structure contour maps of the differing water bearing zones and confining layer?	N
f. Narrative description and calculation of ground-water flows?	Y

	Y/N
g. Water table/potentiometric map?	Y
h. Hydrologic cross sections?	N
6. Did the owner/operator obtain a regional map of the area and delineate the facility?	Y
If yes, does this map illustrate:	
a. Surficial geology features?	Y
b. Streams, rivers, lakes, or wetlands near the facility?	Y
c. Discharging or recharging wells near the facility?	Y
7. Did the owner/operator obtain a regional hydrogeologic map?	Y
If yes, does this hydrogeologic map indicate:	
a. Major areas of recharge/discharge?	Y
b. Regional ground-water flow direction?	Y
c. Potentiometric contours which are consistent with observed water level elevations?	Y
8. Did the owner/operator prepare a facility site map?	Y
If yes, does the site map show:	
a. Regulated units of the facility (e.g., landfill areas, impoundments)?	Y
b. Any seeps, springs, streams, ponds, or wetlands?	Y
c. Location of monitoring wells, soil borings, or test pits?	Y
d. How many regulated units does the facility have? _____	Y
If more than one regulated unit then,	
• Does the waste management area encompass all regulated units?	N/A
• Is a waste management area delineated for each regulated unit?	N/A
<b>C. Characterization of Subsurface Geology of Site</b>	
1. Soil boring/test pit program:	
a. Were the soil borings/test pits performed under the supervision of a qualified professional?	Y
b. Did the owner/operator provide documentation for selecting the spacing for borings?	Y
c. Were the borings drilled to the depth of the first confining unit below the uppermost zone of saturation or ten feet into bedrock?	no info
d. Indicate the method(s) of drilling:	

		Y/N
Auger (hollow or solid stem)	_____	
Mud rotary	_____	
Reverse rotary	<u>X</u>	
Cable tool	_____	
Jetting	_____	
Other (specify) _____	_____	
e. Were continuous sample corings taken?		
f. How were the samples obtained (checked method[s])		<u>X</u>
• Split spoon	<u>X</u>	
• Shelby tube, or similar	_____	
• Rock coring	<u>X</u>	
• Ditch sampling	_____	
• Other (explain) _____	_____	
g. Were the continuous sample corings logged by a qualified professional in geology?		<u>X</u>
h. Does the field boring log include the following information:		
• Hole name/number?		<u>Y</u>
• Date started and finished?		<u>Y</u>
• Driller's name?		<u>Y</u>
• Hole location (i.e., map and elevation)?		<u>Y</u>
• Drill rig type and bit/auger size?		<u>Y</u>
• Gross petrography (e.g., rock type) of each geologic unit?		<u>Y</u>
• Gross mineralogy of each geologic unit?		<u>Y</u>
• Gross structural interpretation of each geologic unit and structural features (e.g., fractures, gouge material, solution channels, buried streams or valleys, identification of depositional material)?		<u>Y</u>
• Development of soil zones and vertical extent and description of soil type?		<u>Y</u>
• Depth of water bearing unit(s) and vertical extent of each?		<u>Y</u>
• Depth and reason for termination of borehole?		<u>Y</u>
• Depth and location of any contaminant encountered in borehole?		<u>N/A</u>
• Sample location/number?		<u>Y</u>
• Percent sample recovery?		<u>Y</u>
• Narrative descriptions of:		
—Geologic observations?		<u>Y</u>
—Drilling observations?		<u>Y</u>
i. Were the following analytical tests performed on the core samples:		<u>Y</u>
• Mineralogy (e.g., microscopic tests and x-ray diffraction)?		<u>N</u>
• Petrographic analysis:		
—degree of crystallinity and cementation of matrix?		<u>Y</u>
—degree of sorting, size fraction (i.e., sieving), textural variations?		<u>N</u>
—rock type(s)?		<u>Y</u>

—soil type?	Y/N
—approximate bulk geochemistry?	N
—existence of microstructures that may effect or indicate fluid flow?	N
• Falling head tests?	Y
• Static head tests?	Y
• Settling measurements?	Y
• Centrifuge tests?	N
• Column drawings?	N
	N
<b>D. Verification of Subsurface Geological Data</b>	
1. Has the owner/operator used indirect geophysical methods to supplement geological conditions between borehole locations?	N
2. Do the number of borings and analytical data indicate that the confining layer displays a low enough permeability to impede the migration of contaminants to any stratigraphically low water-bearing units?	Y
3. Is the confining layer laterally continuous across the entire site?	N
4. Did the owner/operator consider the chemical compatibility of the site-specific waste types and the geologic materials of the confining layer?	Y
5. Did the geologic assessment address or provide means for resolution of any information gaps of geologic data?	N
6. Do the laboratory data corroborate the field data for petrography?	Y
7. Do the laboratory data corroborate the field data for mineralogy and subsurface geochemistry?	N/A
<b>E. Presentation of Geologic Data</b>	
1. Did the owner/operator present geologic cross sections of the site?	Y
2. Do cross sections:	
a. identify the types and characteristics of the geologic materials present?	Y
b. define the contact zones between different geologic materials?	Y
c. note the zones of high permeability or fracture?	Y
d. give detailed borehole information including:	N

• location of borehole?	Y/N
• depth of termination?	N
• location of screen (if applicable)?	N
• depth of zone(s) of saturation?	N
• backfill procedure?	N
3. Did the owner/operator provide a topographic map which was constructed by a licensed surveyor?	Y
4. Does the topographic map provide:	Y
a. contours at a maximum interval of two-feet?	Y
b. locations and illustrations of man-made features (e.g., parking lots, factory buildings, drainage ditches, storm drain, pipelines, etc.)?	Y
c. descriptions of nearby water bodies?	Y
d. descriptions of off-site wells?	N/A
e. site boundaries?	Y
f. individual RCRA units?	Y
g. delineation of the waste management area(s)?	Y
h. well and boring locations?	Y
5. Did the owner/operator provide an aerial photograph depicting the site and adjacent off-site features?	N
6. Does the photograph clearly show surface water bodies, adjacent municipalities, and residences and are these clearly labelled?	N
<b>F. Identification of Ground-Water Flowpaths</b>	
1. Ground-water flow direction	Y
a. Was the well casing height measured by a licensed surveyor to the nearest 0.01 feet?	
b. Were the well water level measurements taken within a 24 hour period?	Y
c. Were the well water level measurements taken to the nearest 0.01 feet?	Y
d. Were the well water levels allowed to stabilize after construction and development for a minimum of 24 hours prior to measurements?	Y
e. Was the water level information obtained from (check appropriate one):	
• multiple piezometers placed in single borehole?	_____
• vertically nested piezometers in closely spaced separate	_____
• boreholes?	_____
• monitoring wells?	X

	Y/N
f. Did the owner/operator provide construction details for the piezometers?	N
g. How were the static water levels measured (check method(s)).	
• Electric water sounder <u>X</u>	
• Wetted tape <u>    </u>	
• Air line <u>    </u>	
• Other (explain) <u>    </u>	
h. Was the well water level measured in wells with equivalent screened intervals at an equivalent depth below the saturated zone?	Y
i. Has the owner/operator provided a site water table (potentiometric) contour map?	Y
If yes,	
• Do the potentiometric contours appear logical and accurate based on topography and presented data? (Consult water level data)	Y
• Are ground-water flow-lines indicated?	Y
• Are static water levels shown?	Y
• Can hydraulic gradients be estimated?	Y
j. Did the owner/operator develop hydrologic cross sections of the vertical flow component across the site using measurements from all wells?	N
k. Do the owner/operator's flow nets include:	
• piezometer locations?	N
• depth of screening?	N
• width of screening?	N
• measurements of water levels from all wells and piezometers?	N
2. Seasonal and temporal fluctuations in ground-water	Y
a. Do fluctuations in static water levels occur? If yes, are the fluctuations caused by any of the following:	
—Off-site well pumping	N
—Tidal processes or other intermittent natural variations (e.g., river stage, etc.)	N
—On-site well pumping	N
—Off-site, on-site construction or changing land use patterns	N
—Deep well injection	N
—Seasonal variations	Y
—Other (specify) <u>    </u>	N
b. Has the owner/operator documented sources and patterns that contribute to or affect the ground-water patterns below the waste management?	Y
c. Do water level fluctuations alter the general ground-water gradients and flow directions?	Y
d. Based on water level data, do any head differentials occur that may indicate a vertical flow component in the saturated zone?	Y

	Y/N
e. Did the owner/operator implement means for gauging long term effects on water movement that may result from on-site or off-site construction or changes in land-use patterns?	N
3. Hydraulic conductivity	-
a. How were hydraulic conductivities of the subsurface materials determined?	
• Single-well tests (slug tests)?	N
• Multiple-well tests (pump tests)	Y
• Other (specify) _____	-
b. If single-well tests were conducted, was it done by:	
• Adding or removing a known volume of water?	N/A
• Pressurizing well casing?	N/A
c. If single well tests were conducted in a highly permeable formation, were pressure transducers and high-speed recording equipment used to record the rapidly changing water levels?	
d. Since single well tests only measure hydraulic conductivity in a limited area, were enough tests run to ensure a representative measure of conductivity in each hydrogeologic unit?	N/A
e. Is the owner/operator's slug test data (if applicable) consistent with existing geologic information (e.g., boring logs)?	N/A
f. Were other hydraulic conductivity properties determined?	Y
g. If yes, provide any of the following data, if available:	
• Transmissivity _____	
• Storage coefficient _____	
• Leakage _____	
• Permeability _____	
• Porosity _____	
• Specific capacity <u>0.05 gpm/ft - 0.21 gpm/ft</u> data not avail. for all wells	
• Other (specify) _____	
4. Identification of the uppermost aquifer	Y
a. Has the extent of the uppermost saturated zone (aquifer) in the facility area been defined? If yes,	
• Are soil boring/test pit logs included?	N
• Are geologic cross-sections included?	N
b. Is there evidence of confining (competent, unfractured, continuous, and low permeability) layers beneath the site? If yes,	Y
• how was continuity demonstrated?	-
c. What is hydraulic conductivity of the confining unit (if present)? CM/Sec How was it determined?	
<u><math>5 \times 10^{-7}</math> cm/s - <math>6.1 \times 10^{-7}</math> cm/s</u>	-

	Y/N
<p>d. Does potential for other hydraulic communication exist (e.g., lateral discontinuity between geologic units, facies changes, fracture zones, cross cutting structures, or chemical corrosion/alteration of geologic units by leachage? If yes or no, what is the rationale?</p> <p><u>Through regional fractures in the Brunswick Formation</u></p>	Y
<p><b>G. Office Evaluation of the Facility's Ground-Water Monitoring System—Monitoring Well Design and Construction:</b></p> <p>These questions should be answered for each different well design present at the facility.</p> <p><b>1. Drilling Methods</b></p> <p>a. What drilling method was used for the well?</p> <ul style="list-style-type: none"> <li>• Hollow-stem auger <input type="checkbox"/></li> <li>• Solid-stem auger <input type="checkbox"/></li> <li>• Mud rotary <input type="checkbox"/></li> <li>• Air rotary <input type="checkbox"/></li> <li>• Reverse rotary <input type="checkbox"/></li> <li>• Cable tool <input type="checkbox"/></li> <li>• Jetting <input type="checkbox"/></li> <li>• Air drill w/ casing hammer <input type="checkbox"/></li> <li>• Other (specify) _____</li> </ul>	unknown
<p>b. Were any cutting fluids (including water) or additives used during drilling? If yes, specify:</p> <ul style="list-style-type: none"> <li>• Type of drilling fluid _____</li> <li>• Source of water used _____</li> <li>• Foam _____</li> <li>• Polymers _____</li> <li>• Other _____</li> </ul>	N/A
<p>c. Was the cutting fluid, or additive, identified?</p>	N/A
<p>d. Was the drilling equipment steam-cleaned prior to drilling the well?</p> <ul style="list-style-type: none"> <li>• Other methods _____</li> </ul>	Y
<p>e. Was compressed air used during drilling? If yes,</p> <ul style="list-style-type: none"> <li>• was the air filtered to remove oil?</li> </ul>	Y/Y
<p>f. Did the owner/operator document procedure for establishing the potentiometric surface? If yes,</p> <ul style="list-style-type: none"> <li>• how was the location established?</li> </ul>	N
<p>g. Formation samples</p>	-



	Y/N
• Were formation samples collected initially during drilling?	Y
• Were any cores taken continuous?	Y
• If not, at what interval were samples taken?	—
• How were the samples obtained? — Split spoon — Shelby tube — Core drill — Other (specify)	—
• Identify if any physical and/or chemical tests were performed on the formation samples (specify) _____ _____ _____	N/A
<b>2. Monitoring Well Construction Materials</b>	
a. Identify construction materials (by number) and diameters (ID/OD)	
	<u>Material</u> <u>Diameter</u>
• Primary Casing	<u>PVC</u> <u>4"</u>
• Secondary or outside casing (double construction)	<u>steel</u> <u>6"</u>
• Screen	<u>PVC</u> <u>4"</u>
b. How are the sections of casing and screen connected?	
• Pipe sections threaded	—
• Couplings (friction) with adhesive or solvent	—
• Couplings (friction) with retainer screws	Y
• Other (specify)	—
c. Were the materials steam-cleaned prior to installation?	
• If no, how were the materials cleaned? _____	Y
<b>3. Well Intake Design and Well Development</b>	
a. Was a well intake screen installed?	
• What is the length of the screen for the well? <u>10 ft into first water bearing zone</u>	—
• Is the screen manufactured?	Y
b. Was a filter pack installed?	
• What kind of filter pack was employed? <u>Clean quartz sand</u>	Y
• Is the filter pack compatible with formation materials?	—
• How was the filter pack installed? <u>dropped into well and tamped</u>	Y
	—

	Y/N
• What are the dimensions of the filter pack? <u>known</u>	—
• Has a turbidity measurement of the well water ever been made?	Y
• Have the filter pack and screen been designed for the insitu materials? <u></u>	Y
c. Well development	
• Was the well developed?	Y
• What technique was used for well development? —Surge block —Bailer <input checked="" type="checkbox"/> Air surging <input checked="" type="checkbox"/> Water pumping —Other (specify) <u></u>	—
4. Annular Space Seals	
a. What is the annular space in the saturated zone directly above the filter pack filled with: <input checked="" type="checkbox"/> Sodium bentonite (specify type and grit) <u>granular pellets</u> —Cement (specify neat or concrete) —Other (specify)	—
b. Was the seal installed by: —Dropping material down the hole and tamping —Dropping material down the inside of hollow-stem auger —Tremie pipe method —Other (specify)	—
c. Was a different seal used in the unsaturated zone? If yes,	N
• Was this seal made with? —Sodium bentonite (specify type and grit) —Cement (specify neat or concrete)- Other (specify)	N/A
• Was this seal installed by? —Dropping material down the hole and tamping —Dropping material down the inside of hollow stem auger —Other (specify)	—
d. Is the upper portion of the borehole sealed with a concrete cap to prevent infiltration from the surface?	Y
e. Is the well fitted with an above-ground protective device and bumper guards?	Y
f. Has the protective cover been installed with locks to prevent tampering?	Y

H. Evaluation of the Facility's Detection Monitoring Program	Y/N
1. Placement of Downgradient Detection Monitoring Wells	Y
a. Are the ground-water monitoring wells or clusters located immediately adjacent to the waste management area?	
b. How far apart are the detection monitoring wells? <i>100 - 1,500 feet</i>	-
c. Does the owner/operator provide a rationale for the location of each monitoring well or cluster?	Y
d. Does the owner/operator identified the well screen lengths of each monitoring well or clusters?	Y
e. Does the owner/operator provide an explanation for the well screen lengths of each monitoring well or cluster?	N
f. Do the actual locations of monitoring wells or clusters correspond to those identified by the owner/operator?	Y
2. Placement of Upgradient Monitoring Wells	Y
a. Has the owner/operator documented the location of each upgradient monitoring well or cluster?	Y
b. Does the owner/operator provide an explanation for the location(s) of the upgradient monitoring wells?	Y
c. What length screen has the owner/operator employed in the background monitoring well(s)? <i>10 ft into first water bearing zone</i>	-
d. Does the owner/operator provide an explanation for the screen length(s) chosen? <i>account for confined/unconfined aquifers</i>	Y
e. Does the actual location of each background monitoring well or cluster correspond to that identified by the owner/operator?	Y
I. Office Evaluation of the Facility's Assessment Monitoring Program	
1. Does the assessment plan specify:	Y
a. The number, location, and depth of wells?	
b. The rationale for their placement and identify the basis that will be used to select subsequent sampling locations and depths in later assessment phases?	Y
2. Does the list of monitoring parameters include all hazardous waste constituents from the facility?	Y

	Y/N
a. Does the water quality parameter list include other important indicators not classified as hazardous waste constituents?	Y
b. Does the owner/operator provide documentation for the listed wastes which are not included?	N/A
3. Does the owner/operator's assessment plan specify the procedures to be used to determine the rate of constituent migration in the ground-water?	N
4. Has the owner/operator specified a schedule of implementation in the assessment plan?	N
5. Have the assessment monitoring objectives been clearly defined in the assessment plan?	Y
a. Does the plan include analysis and/or re-evaluation to determine if significant contamination has occurred in any of the detection monitoring wells?	Y
b. Does the plan provide for a comprehensive program of investigation to fully characterize the rate and extent of contaminant migration from the facility?	Y
c. Does the plan call for determining the concentrations of hazardous wastes and hazardous waste constituents in the ground water?	Y
d. Does the plan employ a quarterly monitoring program?	Y
6. Does the assessment plan identify the investigatory methods that will be used in the assessment phase?	Y
a. Is the role of each method in the evaluation fully described?	N
b. Does the plan provide sufficient descriptions of the direct methods to be used?	N
c. Does the plan provide sufficient descriptions of the indirect methods to be used?	N
d. Will the method contribute to the further characterization of the contaminant movement?	Y
7. Are the investigatory techniques utilized in the assessment program based on direct methods?	Y
a. Does the assessment approach incorporate indirect methods to further support direct methods?	N
b. Will the planned methods called for in the assessment approach ultimately meet performance standards for assessment monitoring?	N
c. Are the procedures well defined?	Y
d. Does the approach provide for monitoring wells similar in design and construction as the detection monitoring wells?	Y

	Y/N
e. Does the approach employ taking samples during drilling or collecting core samples for further analysis?	N
8. Are the indirect methods to be used based on reliable and accepted geophysical techniques?	N/A
a. Are they capable of detecting subsurface changes resulting from contaminant migration at the site?	N/A
b. Is the measurement at an appropriate level of sensitivity to detect ground-water quality changes at the site?	Y
c. Is the method appropriate considering the nature of the subsurface materials?	Y
d. Does the approach consider the limitations of these methods?	Y
e. Will the extent of contamination and constituent concentration be based on direct methods and sound engineering judgment? (Using indirect methods to further substantiate the findings.)	Y
9. Does the assessment approach incorporate any mathematical modeling to predict contaminant movement?	N
a. Will site specific measurements be utilized to accurately portray the subsurface?	unknown
b. Will the derived data be reliable?	unknown
c. Have the assumptions been identified?	unknown
d. Have the physical and chemical properties of the site-specific wastes and hazardous waste constituents been identified?	Y
J. Conclusions	
1. Subsurface geology	Y
a. Has sufficient data been collected to adequately define petrography and petrographic variation?	Y
b. Has the subsurface geochemistry been adequately defined?	Y
c. Was the boring/coring program adequate to define subsurface geologic variation?	Y
d. Was the owner/operator's narrative description complete and accurate in its interpretation of the data?	Y
e. Does the geologic assessment address or provide means to resolve any information gaps?	Y
2. Ground-water flowpaths	Y
a. Did the owner/operator adequately establish the horizontal and vertical components of ground-water flow?	

	Y/N
b. Were appropriate methods used to establish ground-water flowpaths?	Y
c. Did the owner/operator provide accurate documentation?	N
d. Are the potentiometric surface measurements valid?	N
e. Did the owner/operator adequately consider the seasonal and temporal effects on the ground-water?	N
f. Were sufficient hydraulic conductivity tests performed to document lateral and vertical variation in hydraulic conductivity in the entire hydrogeologic subsurface below the site?	N
3. Uppermost Aquifer	
a. Did the owner/operator adequately define the upper-most aquifer?	Y
4. Monitoring Well Construction and Design	
a. Do the design and construction of the owner/operator's ground-water monitoring wells permit depth discrete ground-water samples to be taken?	Y
b. Are the samples representative of ground-water quality?	N
c. Are the ground-water monitoring wells structurally stable?	Y
d. Does the ground-water monitoring well's design and construction permit an accurate assessment of aquifer characteristics?	Y
5. Detection Monitoring	
a. Downgradient Wells <ul style="list-style-type: none"> <li>Do the location, and screen lengths of the ground-water monitoring wells or clusters in the detection monitoring system allow the immediate detection of a release of hazardous waste or constituents from the hazardous waste management area to the uppermost aquifer?</li> </ul>	Unknown
b. Upgradient Wells <ul style="list-style-type: none"> <li>Do the location and screen lengths of the upgradient (background) ground-water monitoring wells ensure the capability of collecting ground-water samples representative of upgradient (background) ground-water quality including any ambient heterogeneous chemical characteristics?</li> </ul>	Y
6. Assessment Monitoring	
a. Has the owner/operator adequately characterized site hydrogeology to determine contaminant migration?	Y
b. Is the detection monitoring system adequately designed and constructed to immediately detect any contaminant release?	Unknown

	Y/N
c. Are the procedures used to make a first determination of contamination adequate?	N
d. Is the assessment plan adequate to detect, characterize, and track contaminant migration?	Y
e. Will the assessment monitoring wells, given site hydrogeologic conditions, define the extent and concentration of contamination in the horizontal and vertical planes?	Y
f. Are the assessment monitoring wells adequately designed and constructed?	unknown
g. Are the sampling and analysis procedures adequate to provide true measures of contamination?	Y
h. Do the procedures used for evaluation of assessment monitoring data result in determinations of the rate of migration, extent of migration, and hazardous constituent composition of the contaminant plume?	N
i. Are the data collected at sufficient frequency and duration to adequately determine the rate of migration?	N
j. Is the schedule of implementation adequate?	N
k. Is the owner/operator's assessment monitoring plan adequate?	N
• If the owner/operator had to implement his assessment monitoring plan, was it implemented satisfactorily?	N
<b>II. Field Evaluation</b>	
<b>A. Ground-Water Monitoring System</b>	Y
1. Are the numbers, depths, and locations of monitoring wells in agreement with those reported in the facility's monitoring plan? (See Section 3.2.3.)	
<b>B. Monitoring Well Construction</b>	
1. Identify construction material material diameter	
a. Primary Casing <u>4"</u>	
b. Secondary or outside casing <u>6"</u>	
2. Is the upper portion of the borehole sealed with concrete to prevent infiltration from the surface?	Y
3. Is the well fitted with an above-ground protective device?	Y
4. Is the protective cover fitted with locks to prevent tampering? If a facility utilizes more than a single well design, answer the above questions for each well design?	Y

	Y/N
<b>III. Review of Sample Collection Procedures</b>	
<b>A. Measurement of Well Depths /Elevation</b>	Y
1. Are measurements of both depth to standing water and depth to the bottom of the well made?	
2. Are measurements taken to the 0.01 feet?	Y
3. What device is used? <i>solist electric water meter</i>	-
4. Is there a reference point established by a licensed surveyor?	Y
5. Is the measuring equipment properly cleaned between well locations to prevent cross contamination?	Y
<b>B. Detection of Immiscible Layers</b>	
1. Are procedures used which will detect light phase immiscible layers?	N/A
2. Are procedures used which will detect heavy phase immiscible layers?	N/A
<b>C. Sampling of Immiscible Layers</b>	
1. Are the immiscible layers sampled separately prior to well evacuation?	N/A
2. Do the procedures used minimize mixing with watersoluble phases?	N/A
<b>D. Well Evacuation</b>	
1. Are low yielding wells evacuated to dryness?	Y
2. Are high yielding wells evacuated so that at least three casing volumes are removed?	Y
3. What device is used to evacuate the wells? <i>submersible pump</i>	-
4. If any problems are encountered (e.g., equipment malfunction) are they noted in a field logbook?	Y



E. Sample Withdrawal	Y/N
1. For low yielding wells, are samples for volatiles, pH, and oxidation/reduction potential drawn first after the well recovers?	Y
2. Are samples withdrawn with either fluorocarbon/resins or stainless steel (316, 304 or 2205) sampling devices?	Y
3. Are sampling devices either bottom valve bailers or positive gas displacement bladder pumps?	Y
4. If bailers are used, is fluorocarbon/resin coated wire, single strand stainless steel wire, or monofilament used to raise and lower the bailer?	Y
5. If bladder pumps are used, are they operated in a continuous manner to prevent aeration of the sample?	N/A
6. If bailers are used, are they lowered slowly to prevent degassing of the water?	N/A
7. If bailers are used, are the contents transferred to the sample container in a way that minimizes agitation and aeration?	N/A
8. Is care taken to avoid placing clean sampling equipment on the ground or other contaminated surfaces prior to insertion into the well?	Y
9. If dedicated sampling equipment is not used, is equipment disassembled and thoroughly cleaned between samples?	N/A
10. If samples are for inorganic analysis, does the cleaning procedure include the following sequential steps: a. Dilute acid rinse ( $\text{HNO}_3$ or $\text{HCl}$ )?	Y
11. If samples are for organic analysis, does the cleaning procedure include the following sequential steps:	Y
a. Nonphosphate detergent wash?	Y
b. Tap water rinse?	Y
c. Distilled/deionized water rinse?	Y
d. Acetone rinse?	Y
e. Pesticide-grade hexane rinse?	N/A

	Y/N
12. Is sampling equipment thoroughly dry before use?	N
13. Are equipment blanks taken to ensure that sample cross-contamination has not occurred?	Y
14. If volatile samples are taken with a positive gas displacement bladder pump, are pumping rates below 100 ml/min?	N/A
<b>F. In-situ or Field Analyses</b>	
1. Are the following labile (chemically unstable) parameters determined in the field:	Y
a. pH?	
b. Temperature?	Y
c. Specific conductivity?	Y
d. Redox potential?	N
e. Chlorine?	N
f. Dissolved oxygen?	N
g. Turbidity?	N
h. Other (specify) _____	N
2. For in-situ determinations, are they made after well evacuation and sample removal?	Y
3. If sample is withdrawn from the well, is parameter measured from a split portion?	Y
4. Is monitoring equipment calibrated according to manufacturers' specifications and consistent with SW-846?	Y
5. Is the date, procedure, and maintenance for equipment calibration documented in the field logbook?	Y
<b>IV. Review of Sample Preservation and Handling Procedures</b>	
<b>A. Sample Containers</b>	Y
1. Are samples transferred from the sampling device directly to their compatible containers?	

	Y/N
2. Are sample containers for metals (inorganics) analyses polyethylene with polypropylene caps?	Y
3. Are sample containers for organics analysis glass bottles with fluorocarbonresin-lined caps?	Y
4. If glass bottles are used for metals samples are the caps fluorocarbonresin-lined?	N/A
5. Are the sample containers for metal analyses cleaned using these sequential steps:	
a. Nonphosphate detergent wash?	Y
b. 1:1 nitric acid rinse?	Y
c. Tap water rinse?	Y
d. 1:1 hydrochloric acid rinse?	Y
e. Tap water rinse?	Y
f. Distilled/deionized water rinse?	Y
6. Are the sample containers for organic analyses cleaned using these sequential steps:	Y
a. Nonphosphate detergent/hot water wash?	Y
b. Tap water rinse?	Y
c. Distilled/deionized water rinse?	Y
d. Acetone rinse?	Y
e. Pesticide-grade hexane rinse?	Y
7. Are trip blanks used for each sample container type to verify cleanliness?	Y
<b>B. Sample Preservation Procedures</b>	
1. Are samples for the following analyses cooled to 4°C:	Y
a. TOC?	Y
b. TOX?	Y
c. Chloride?	Y
d. Phenols?	Y
e. Sulfate?	Y
f. Nitrate?	Y
g. Coliform bacteria?	Y
h. Cyanide?	N/A
i. Oil and grease?	N/A
j. Hazardous constituents ( ) 261, Appendix VIII)?	N/A
	Y

	Y/N
2. Are samples for the following analyses field acidified to pH $\leq 2$ with $\text{HNO}_3$ :	
a. Iron?	Y
b. Manganese?	Y
c. Sodium?	Y
d. Total metals?	Y
e. Dissolved metals?	Y
f. Fluoride?	N/A
g. Endrin?	N/A
h. Lindane?	N/A
i. Methoxychlor?	N/A
j. Toxaphene?	N/A
k. 2,4, D?	N/A
l. 2,4,5 TP Silvex?	N/A
m. Radium?	N/A
n. Gross alpha?	N/A
o. Gross beta?	N/A
3. Are samples for the following analyses field acidified to pH $\leq 2$ with $\text{H}_2\text{SO}_4$ :	
a. Phenols?	Y
b. Oil and grease?	N/A
4. Is the sample for TOC analyses field acidified to pH $\leq 2$ with $\text{HCl}$ ?	Y
5. Is the sample for TOX analysis preserved with 1 ml of 1.1 M sodium sulfite?	N
6. Is the sample for cyanide analysis preserved with $\text{NaOH}$ to pH $> 12$ ?	N/A
C. Special Handling Considerations	
1. Are organic samples handled without filtering?	Y
2. Are samples for volatile organics transferred to the appropriate vials to eliminate headspace over the sample?	Y
3. Are samples for metal analysis split into two portions?	Y
4. Is the sample for dissolved metals filtered through a 0.45 micron filter?	Y
5. Is the second portion not filtered and analyzed for total metals?	Y
6. Is one equipment blank prepared each day of ground-water sampling?	Y

	Y/N
<b>V. Review of Chain-of-Custody Procedures</b>	
<b>A. Sample Labels</b>	
1. Are sample labels used?	Y
2. Do they provide the following information:	Y
a. Sample identification number?	Y
b. Name of collector?	Y
c. Date and time of collection?	Y
d. Place of collection?	Y
e. Parameter(s) requested and preservatives used?	Y
3. Do they remain legible even if wet?	Y
<b>B. Sample Seals</b>	
1. Are sample seals placed on those containers to ensure samples are not altered?	Y
<b>C. Field Logbook</b>	
1. Is a field logbook maintained?	Y
2. Does it document the following:	Y
a. Purpose of sampling (e.g., detection or assesment)?	Y
b. Location of well(s)?	Y
c. Total depth of each well?	Y
d. Static water level depth and measurement technique?	Y
e. Presence of immiscible layers and detection method?	Y
f. Collection method for immiscible layers and sample identification numbers?	Y
g. Well evacuation procedures?	Y
h. Sample withdrawal procedure?	Y
i. Date and time of collection?	Y
j. Well sampling sequence?	Y
k. Types of sample containers and sample identification number(s)?	Y
l. Preservative(s) used?	Y
m. Parameters requested?	Y
n. Field analysis data and method(s)?	Y
o. Sample distribution and transporter?	Y
p. Field observations?	Y

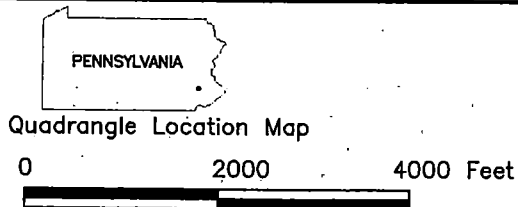
	Y/N
—Unusual well recharge rates?	Y
—Equipment malfunction(s)?	Y
—Possible sample contamination?	Y
—Sampling rate?	Y
<b>D. Chain-of-Custody Record</b>	
1. Is a chain-of-custody record included with each sample?	Y
2. Does it document the following:	
a. Sample number?	Y
b. Signature of collector?	Y
c. Date and time of collection?	Y
d. Sample type?	Y
e. Station location?	Y
f. Number of containers?	Y
g. Parameters requested?	Y
h. Signatures of persons involved in chain-of-custody?	Y
i. Inclusive dates of custody?	Y
<b>E. Sample Analysis Request Sheet</b>	
1. Does a sample analysis request sheet accompany each sample?	Y
2. Does the request sheet document the following:	
a. Name of person receiving the sample?	Y
b. Date of sample receipt?	Y
c. Duplicates?	Y
d. Analysis to be performed?	Y
<b>IV. Review of Quality Assurance/Quality Control</b>	
A. Is the validity and reliability of the laboratory and field generated data ensured by a QA/QC program?	Y
B. Does the QA/QC program include:	
1. Documentation of any deviation from approved procedures?	Y

	Y/N
2. Documentation of analytical results for:	
a. Blanks?	Y
b. Standards?	Y
c. Duplicates?	Y
d. Spiked samples?	Y
e. Detectable limits for each parameter being analyzed?	Y
C. Are approved statistical methods used?	Y
D. Are QC samples used to correct data?	Y
E. Are all data critically examined to ensure it has been properly calculated and reported?	Y
<b>VII. Surficial Well Inspection and Field Observation</b>	Y
A. Are the wells adequately maintained?	
B. Are the monitoring wells protected and secure?	Y
C. Do the wells have surveyed casing elevations?	Y
D. Are the ground-water samples turbid?	Y
E. Have all physical characteristics of the site been noted in the inspector's field notes (i.e., surface waters, topography, surface features)?	Y
F. Has a site sketch been prepared by the field inspector with scale, north arrow, location(s) of buildings, location(s) of regulated units, locations of monitoring wells, and a rough depiction of the site drainage pattern?	Y

	Y/N
<b>VIII. Conclusions</b>	
A. Is the facility currently operating under the correct monitoring program according to the statistical analyses performed by the current operator?	N
B. Does the ground-water monitoring system, as designed and operated, allow for detection or assessment of any possible ground-water contamination caused by the facility?	N
C. Does the sampling and analysis procedures permit the owner/operator to detect and, where possible, assess the nature and extent of a release of hazardous constituents to ground water from the monitored hazardous waste management facility?	N



## **FIGURES**



Source: U.S.G.S. Topographic Maps (7.5 Minute)  
Sassamansville, PA Quadrangle

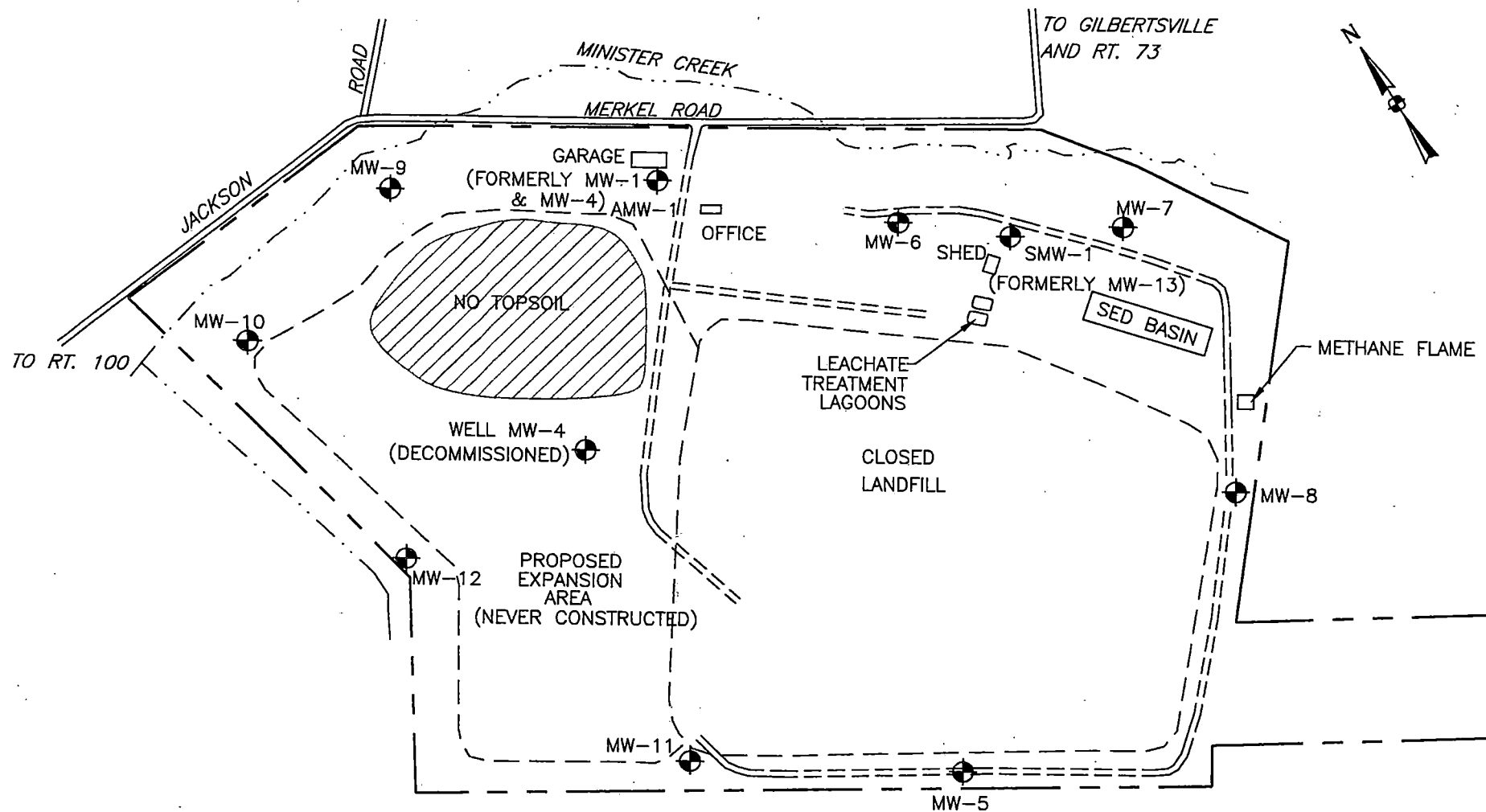
Commonwealth of Pennsylvania  
Department of Environmental Protection

Boyertown Sanitary Disposal Landfill  
Gilbertsville, PA

Figure 1  
Site Location Map

 **TETRA TECH EC, INC.**

P:\EIS\Drawings\Boyertown\site layout.dwg, 07/13/2005 08:13:10 AM



NOT TO SCALE

Commonwealth of Pennsylvania  
Department of Environmental Protection

Boyertown Sanitary Disposal Landfill  
Gilbertsville, PA

Figure 2  
Monitoring Well Locations

 TETRA TECH EC, INC.

## **TABLES**

Table 1  
Boyertown Sanitary Disposal Landfill  
PADEP Data  
Monitoring Well Locations  
Metals and Other Parameters

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-5 5/19/2005	MW-6 5/17/2005	MW-7 5/17/2005	MW-8 5/17/2005	MW-9 5/19/2005
COLLECTION DATE							
Arsenic R	(ug/l)	50	7.0	ND	ND	ND	ND
Arsenic D	(ug/l)	50	ND	ND	ND	ND	ND
Barium R	(ug/l)	2000	685.00	409.00	529.00	1380.00	350.00
Barium D	(ug/l)	2000	370.00	364.00	530.00	1350.00	171.00
Cadmium R	(ug/l)	5	0.3	ND	ND	ND	0.35
Cadmium D	(ug/l)	5	ND	ND	ND	ND	ND
Calcium R	(mg/l)	--	135.00	57.7	84.8	103.00	61.3
Calcium D	(mg/l)	--	66.8	57.7	82.4	104.00	58.5
Chromium R	(ug/l)	100	29.4	5.5	ND	ND	14.8
Chromium D	(ug/l)	100	ND	ND	ND	ND	ND
Copper R	(ug/l)	1000	98.00	10.00	ND	ND	21.00
Copper D	(ug/l)	1000	ND	ND	ND	ND	ND
Iron R	(ug/l)	300*	<b>154000.00</b>	<b>3130.00</b>	36.00	<b>507.00</b>	<b>11100.00</b>
Iron D	(ug/l)	300*	ND	23.00	ND	ND	ND
Lead Tot R	(ug/l)	5	<b>60.2</b>	1.8	ND	ND	<b>6.7</b>
Lead D	(ug/l)	5	ND	ND	ND	2.3	ND
Magnesium R	(mg/l)	--	42.3	20.3	24.8	42.4	18.3
Magnesium D	(mg/l)	--	28.3	19.7	24.3	42.6	13.8
Manganese R	(ug/l)	50*	<b>1850.00</b>	<b>76.00</b>	<b>429.00</b>	24.00	<b>359.00</b>
Manganese D	(ug/l)	50*	49.00	ND	<b>433.00</b>	12.00	ND
Mercury R	(ug/l)	2	ND	ND	ND	ND	ND
Mercury D	(ug/l)	2	ND	ND	ND	ND	ND
Potassium R	(mg/l)	--	4.21	4.519	2.18	1.933	3.79
Potassium D	(mg/l)	--	1.32	3.107	2.17	1.662	1.12
Selenium R	(ug/l)	50	ND	ND	ND	ND	ND
Selenium D	(ug/l)	50	ND	ND	ND	ND	ND
Silver R	(ug/l)	100	ND	ND	ND	ND	ND
Silver D	(ug/l)	100	ND	ND	ND	ND	ND
Sodium R	(mg/l)	--	14.1	10.837	25.3	14.1	7.21
Sodium D	(mg/l)	--	12.8	10.754	25.2	14.2	6.93
Zinc R	(ug/l)	2000	146	18	ND	ND	47.00
Zinc D	(ug/l)	2000	ND	ND	ND	11	ND
Alkalinity	mg/l	--	316.6	224.8	204.2	332.8	194.2
Sulfate Total	mg/l	--	25.2	23.9	ND	21.6	ND
Total Organic Halide	ug/l	--	ND	7.44	17.79	16.51	ND
Specific Conductance	umhos/cm	--	568.00	498.00	753.00	942.00	398.00
Turbidity	NTU	--	685.5	85.4	1.4	19.29	458.00
Amonia-N Total	mg/l	--	ND	ND	0.1	ND	ND
COD	mg/l	--	ND	ND	14.8	10.7	ND
Fluoride Total	mg/l	--	ND	ND	ND	ND	0.2
pH	SU	--	7.6	7.7	7.6	7.4	7.5
TDS @105C	mg/l	--	478	328	534	642	304
Nitrate-N	mg/l	--	1.24	3.64	0.65	0.84	0.95
Total Organic Carbon	mg/l	--	2.67	1.28	3.82	2.58	3.03
Phenols-Dist	ug/l	--	ND	ND	ND	ND	ND
Chloride	mg/l	--	14.3	11.2	118.6	117.5	4.1

NOTES:

-- = No criteria available.

Criteria provided for chromium corresponds to total (if available) or hexavalent chromium.

\* indicates criterion value corresponds to EPA "Secondary Drinking Water Regulations" and PADEP "Secondary Contaminants Medium-specific Concentrations."

J = Estimated.

NA = Not Analyzed.

ND = Not Detected.

Bold = Exceedance.

R = Total.

D = Dissolved.

PADEP MSCs are for dissolved, not total metals.

Table 1  
Boyertown Sanitary Disposal Landfill  
PADEP Data  
Monitoring Well Locations  
Metals and Other Parameters

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-10 5/19/2005	MW-11 5/19/2005	MW-12 5/19/2005	SMW-1 5/17/2005
COLLECTION DATE						
Arsenic R	(ug/l)	50	ND	4.4	12.6	ND
Arsenic D	(ug/l)	50	ND	ND	5.1	ND
Barium R	(ug/l)	2000	478.00	610.00	410.00	505.00
Barium D	(ug/l)	2000	267.00	292.00	157.00	492.00
Cadmium R	(ug/l)	5	ND	ND	ND	ND
Cadmium D	(ug/l)	5	ND	ND	ND	ND
Calcium R	(mg/l)	--	75.9	61.00	65.5	156.00
Calcium D	(mg/l)	--	75.4	52.7	61.4	162.00
Chromium R	(ug/l)	100	7.3	28.9	7.9	ND
Chromium D	(ug/l)	100	ND	ND	ND	ND
Copper R	(ug/l)	1000	18.00	38.00	20.00	11.00
Copper D	(ug/l)	1000	ND	ND	ND	ND
Iron R	(ug/l)	300*	<b>5490.00</b>	<b>10100.00</b>	<b>4920.00</b>	54.00
Iron D	(ug/l)	300*	22.00	ND	ND	30.00
Lead Tot R	(ug/l)	5	2.7	<b>8.3</b>	3.6	ND
Lead D	(ug/l)	5	ND	ND	ND	ND
Magnesium R	(mg/l)	--	13.7	8.49	15.2	46.5
Magnesium D	(mg/l)	--	12.2	5.6	13.1	45.4
Manganese R	(ug/l)	50*	<b>226.00</b>	<b>332.00</b>	<b>11500.00</b>	<b>950.00</b>
Manganese D	(ug/l)	50*	20.00	ND	ND	<b>912.00</b>
Mercury R	(ug/l)	2	ND	ND	ND	ND
Mercury D	(ug/l)	2	ND	ND	ND	ND
Potassium R	(mg/l)	--	2.51	2.8	2.16	2.39
Potassium D	(mg/l)	--	ND	1.05	ND	2.11
Selenium R	(ug/l)	50	ND	ND	ND	ND
Selenium D	(ug/l)	50	ND	ND	ND	ND
Silver R	(ug/l)	100	ND	ND	ND	ND
Silver D	(ug/l)	100	ND	ND	ND	ND
Sodium R	(mg/l)	--	8.41	7.18	7.5	89.5
Sodium D	(mg/l)	--	7.94	6.23	7.32	92.4
Zinc R	(ug/l)	2000	21.00	47.00	29.00	16.00
Zinc D	(ug/l)	2000	ND	14.00	ND	ND
Alkalinity	mg/l	--	227.2	157.00	202.2	396.4
Sulfate Total	mg/l	--	ND	ND	32.2	26.2
Total Organic Halide	ug/l	--	ND	ND	ND	71.44
Specific Conductance	umhos/cm	--	450.00	339.00	400.00	1522.00
Turbidity	NTU	--	218.00	332.8	213.9	ND
Amonia-N Total	mg/l	--	ND	ND	ND	0.05
COD	mg/l	--	ND	ND	ND	25.3
Fluoride Total	mg/l	--	ND	ND	ND	ND
pH	SU	--	7.2	7.2	7.8	7.3
TDS @ 105C	mg/l	--	376	340	304	1020
Nitrate-N	mg/l	--	0.9	1.24	0.3	2.76
Total Organic Carbon	mg/l	--	2.6	2.54	1.13	5.76
Phenols-Dist	ug/l	--	ND	10.23	ND	ND
Chloride	mg/l	--	1.5	2.8	2	272.9

NOTES:

-- = No criteria available.

Criteria provided for chromium corresponds to total (if available) or hexavalent chromium.

\* indicates criterion value corresponds to EPA "Secondary Drinking Water Regulations" and PADEP "Secondary Contaminants Medium-specific Concentrations."

J = Estimated.

NA = Not Analyzed.

ND = Not Detected.

Bold = Exceedance.

R = Total.

D = Dissolved.

PADEP MSCs are for dissolved, not total metals.

Table 1  
Boyertown Sanitary Disposal Landfill  
PADEP Data  
Monitoring Well Locations  
Metals and Other Parameters

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	AMW-1 5/17/2005
COLLECTION DATE			
Arsenic R	(ug/l)	50	ND
Arsenic D	(ug/l)	50	ND
Barium R	(ug/l)	2000	826.00
Barium D	(ug/l)	2000	819.00
Cadmium R	(ug/l)	5	0.3
Cadmium D	(ug/l)	5	0.3
Calcium R	(mg/l)	--	96.4
Calcium D	(mg/l)	--	95.2
Chromium R	(ug/l)	100	ND
Chromium D	(ug/l)	100	ND
Copper R	(ug/l)	1000	ND
Copper D	(ug/l)	1000	ND
Iron R	(ug/l)	300*	ND
Iron D	(ug/l)	300*	20.00
Lead Tot R	(ug/l)	5	2.3
Lead D	(ug/l)	5	2.3
Magnesium R	(mg/l)	--	39.2
Magnesium D	(mg/l)	--	38.7
Manganese R	(ug/l)	50*	ND
Manganese D	(ug/l)	50*	ND
Mercury R	(ug/l)	2	ND
Mercury D	(ug/l)	2	ND
Potassium R	(mg/l)	--	1.323
Potassium D	(mg/l)	--	1.331
Selenium R	(ug/l)	50	ND
Selenium D	(ug/l)	50	ND
Silver R	(ug/l)	100	ND
Silver D	(ug/l)	100	ND
Sodium R	(mg/l)	--	15.1
Sodium D	(mg/l)	--	15
Zinc R	(ug/l)	2000	1160.00
Zinc D	(ug/l)	2000	1150.00
Alkalinity	mg/l	--	368.4
Sulfate Total	mg/l	--	22.1
Total Organic Halide	ug/l	--	67.91
Specific Conductance	umhos/cm	--	858.00
Turbidity	NTU	--	ND
Amonia-N Total	mg/l	--	ND
COD	mg/l	--	ND
Fluoride Total	mg/l	--	0.20
pH	SU	--	7.4
TDS @ 105C	mg/l	--	558
Nitrate-N	mg/l	--	1.08
Total Organic Carbon	mg/l	--	2.96
Phenols-Dist	ug/l	--	ND
Chloride	mg/l	--	67.5

**NOTES:**

-- = No criteria available.

Criteria provided for chromium corresponds to total (if available) or hexavalent chromium.

\* indicates criterion value corresponds to EPA "Secondary Drinking Water Regulations" and PADEP "Secondary Contaminants Medium-specific Concentrations."

J = Estimated.

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ND = Not Detected.

Bold = Exceedance.

R = Total.

D = Dissolved.

PADEP MSCs are for dissolved, not total metals.

Table 2  
Boyertown Sanitary Disposal Landfill  
TiEC Data  
Monitoring Well Locations  
Metals

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-5 5/19/2005	MW-6 5/17/2005	MW-7 5/17/2005	MW-8 5/17/2005	MW-9 5/19/2005
COLLECTION DATE							
Aluminum	(ug/l)	200*	23.8	16.4	12.8	25.7	10.5
Antimony	(ug/l)	6	3.2	4.32	5.64	5.85	3.72
Arsenic	(ug/l)	50	ND	ND	ND	3.72	ND
Barium	(ug/l)	2000	418	378	501	1310	170
Beryllium	(ug/l)	4	ND	0.185	ND	ND	ND
Cadmium	(ug/l)	5	ND	ND	ND	ND	ND
Calcium	(ug/l)	--	69200	63600	83100	104000	54300
Chromium	(ug/l)	100	2.64	2.25	1.04	1.17	1.06
Cobalt	(ug/l)	2000	0.905	ND	1.71	0.4	0.62
Copper	(ug/l)	1000	9.65	11.8	9.89	8.21	8.15
Iron	(ug/l)	300*	ND	42.3	ND	ND	55.4
Lead	(ug/l)	5	ND	2.78	ND	ND	ND
Magnesium	(ug/l)	--	29300	21700	22300	42800	12200
Manganese	(ug/l)	50*	<b>55.1</b>	6.14	<b>401</b>	11.5	2.67
Nickel	(ug/l)	100	2.48	2.03	4.63	ND	ND
Potassium	(ug/l)	--	1530	3190	2100	1810	809
Selenium	(ug/l)	50	3.28	7.36	4.28	5.32	ND
Silver	(ug/l)	100	ND	ND	1.92	ND	ND
Sodium	(ug/l)	--	12900	12600	23600	14000	6000
Thallium	(ug/l)	2	ND	<b>4.87</b>	ND	<b>6.12</b>	<b>6.66</b>
Vanadium	(ug/l)	720	4.29	3.27	2.12	2.75	3.14
Zinc	(ug/l)	2000	24.7	28.6	ND	19.8	21.9

NOTES:

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Criteria provided for chromium corresponds to total (if available)  
or hexavalent chromium.

\* = indicates criterion value corresponds to EPA "Secondary Drinking Water  
Regulations" and PADEP Secondary Contaminants  
Medium-Specific Concentrations."

J = Estimated.

NA = Not Analyzed.

ND = Not Detected.

Bold = Exceedance.



Table 2  
Boyertown Sanitary Disposal Landfill  
TTEC Data  
Monitoring Well Locations  
Metals

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-10	MW-11	MW-12	SMW-1
COLLECTION DATE			5/19/2005	5/19/2005	5/19/2005	5/17/2005
Aluminum	(ug/l)	200*	14.4	21	54.9	10.9
Antimony	(ug/l)	6	5.06	3.82	5.13	3.28
Arsenic	(ug/l)	50	ND	ND	3.97	ND
Barium	(ug/l)	2000	261	307	153	541
Beryllium	(ug/l)	4	ND	ND	0.11	ND
Cadmium	(ug/l)	5	ND	ND	ND	ND
Calcium	(ug/l)	--	67200	51200	55800	172000
Chromium	(ug/l)	100	2.03	0.695	2.06	3.07
Cobalt	(ug/l)	2000	0.65	1.52	5.53	ND
Copper	(ug/l)	1000	10	8.99	8.22	14.5
Iron	(ug/l)	300*	34	72.1	30.4	ND
Lead	(ug/l)	5	ND	ND	2.62	ND
Magnesium	(ug/l)	--	10000	5830	11100	44500
Manganese	(ug/l)	50*	19.9	4.39	9.46	973
Nickel	(ug/l)	100	ND	ND	ND	9.24
Potassium	(ug/l)	--	799	982	573	3230
Selenium	(ug/l)	50	ND	ND	ND	ND
Silver	(ug/l)	100	ND	2.2	ND	ND
Sodium	(ug/l)	--	6930	6570	6010	110000
Thallium	(ug/l)	2	ND	ND	<b>9.84</b>	ND
Vanadium	(ug/l)	720	1.86	2.5	2.5	2.37
Zinc	(ug/l)	2000	21.6	30.9	20.1	26.5

**NOTES:**

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Criteria provided for chromium corresponds to total (if available)  
or hexavalent chromium.

\* = indicates criterion value corresponds to EPA "Secondary Drinking Water  
Regulations" and PADEP Secondary Contaminants  
Medium-Specific Concentrations."

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ND = Not Detected.

Bold = Exceedance.

Table 2  
 Boyertown Sanitary Disposal Landfill  
 T1EC Data  
 Monitoring Well Locations  
 Metals

SAMPLE IDENTIFICATION	PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	AMW-1 5/17/2005
Aluminum (ug/l)	200*	7.41
Antimony (ug/l)	6	ND
Arsenic (ug/l)	50	ND
Barium (ug/l)	2000	836
Beryllium (ug/l)	4	ND
Cadmium (ug/l)	5	ND
Calcium (ug/l)	--	98300
Chromium (ug/l)	100	1.58
Cobalt (ug/l)	2000	1.71
Copper (ug/l)	1000	12.1
Iron (ug/l)	300*	38.7
Lead (ug/l)	5	3.46
Magnesium (ug/l)	--	40100
Manganese (ug/l)	50*	2.54
Nickel (ug/l)	100	ND
Potassium (ug/l)	--	1470
Selenium (ug/l)	50	ND
Silver (ug/l)	100	ND
Sodium (ug/l)	--	16200
Thallium (ug/l)	2	ND
Vanadium (ug/l)	720	3.65
Zinc (ug/l)	2000	1180

**NOTES:**

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 or hexavalent chromium.

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 Regulations" and PADEP Secondary Contaminants  
 Medium-Specific Concentrations."

J = Estimated.

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Bold = Exceedance.

Table 3  
Boyertown Sanitary Disposal Landfill  
TtEC Data  
Monitoring Well Locations  
Volatile Organic Compounds

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	SMW-1 5/17/2005	MW-5 5/19/2005	MW-6 5/17/2005	MW-7 5/17/2005
COLLECTION DATE						
Chloromethane	(ug/l)	3	ND	ND	ND	ND
Vinyl Chloride	(ug/l)	2	ND	ND	ND	ND
Bromoethane	(ug/l)	10	ND	ND	ND	ND
Chloroethane	(ug/l)	230	ND	ND	ND	ND
1,1-Dichloroethene	(ug/l)	7	ND	ND	ND	ND
1,1-Dichloroethane	(ug/l)	27	ND	ND	ND	ND
cis-1,2-Dichloroethene	(ug/l)	70	ND	ND	ND	ND
Chloroform	(ug/l)	100	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	200	ND	ND	ND	ND
Carbon Tetrachloride	(ug/l)	5	ND	ND	ND	ND
Benzene	(ug/l)	5	ND	ND	ND	ND
1,2-Dichloroethane	(ug/l)	5	ND	ND	ND	ND
Trichloroethene	(ug/l)	5	ND	ND	ND	ND
1,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND
cis-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
Toluene	(ug/l)	1000	ND	ND	ND	ND
trans-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
1,1,2-Trichloroethane	(ug/l)	5	ND	ND	ND	ND
Tetrachloroethene	(ug/l)	5	ND	ND	ND	ND
Chlorobenzene	(ug/l)	100	ND	ND	ND	ND
Ethyl Benzene	(ug/l)	700	ND	ND	ND	ND
m,p-Xylene	(ug/l)	10000	ND	ND	ND	ND
o-Xylene	(ug/l)	10000	ND	ND	ND	ND
Styrene	(ug/l)	100	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND
Methylene Chloride	(ug/l)	5	ND	ND	ND	ND
Acetone	(ug/l)	3700	ND	ND	ND	ND
Carbon Disulfide	(ug/l)	1900	ND	ND	ND	ND
trans-1,2-Dichloroethene	(ug/l)	100	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	(ug/l)	2800	ND	ND	ND	ND
Bromodichloromethane	(ug/l)	100	ND	ND	ND	ND
4-Methyl-2-pentanone	(ug/l)	--	ND	ND	ND	ND
2-Hexanone	(ug/l)	--	ND	ND	ND	ND
Dibromochloromethane	(ug/l)	--	ND	ND	ND	ND
Bromoform	(ug/l)	100	ND	ND	ND	ND

**NOTES:**

-- = No criteria available.

J=The reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

ND =Not Detected.

Table 3  
Boyertown Sanitary Disposal Landfill  
TTEC Data  
Monitoring Well Locations  
Volatile Organic Compounds

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-8 5/17/2005	MW-8DUP 5/17/2005	MW-9 5/19/2005	MW-10 5/19/2005	MW-11 5/19/2005
COLLECTION DATE							
Chloromethane	(ug/l)	3	ND	ND	ND	ND	ND
Vinyl Chloride	(ug/l)	2	ND	ND	ND	ND	ND
Bromoethane	(ug/l)	10	ND	ND	ND	ND	ND
Chloroethane	(ug/l)	230	0.50	ND	ND	ND	ND
1,1-Dichloroethene	(ug/l)	7	ND	ND	ND	ND	ND
1,1-Dichloroethane	(ug/l)	27	0.68	0.69	ND	ND	ND
cis-1,2-Dichloroethene	(ug/l)	70	0.98	0.95	ND	ND	ND
Chloroform	(ug/l)	100	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	200	ND	ND	ND	ND	ND
Carbon Tetrachloride	(ug/l)	5	ND	ND	ND	ND	ND
Benzene	(ug/l)	5	ND	ND	ND	ND	ND
1,2-Dichloroethane	(ug/l)	5	ND	ND	ND	ND	ND
Trichloroethene	(ug/l)	5	ND	ND	ND	ND	ND
1,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND	ND
Toluene	(ug/l)	1000	ND	ND	ND	ND	0.34
trans-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	(ug/l)	5	ND	ND	ND	ND	ND
Tetrachloroethene	(ug/l)	5	ND	ND	ND	ND	ND
Chlorobenzene	(ug/l)	100	0.55	0.57	ND	ND	ND
Ethyl Benzene	(ug/l)	700	ND	ND	ND	ND	ND
m,p-Xylene	(ug/l)	10000	ND	ND	ND	ND	ND
o-Xylene	(ug/l)	10000	ND	ND	ND	ND	ND
Styrene	(ug/l)	100	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND	ND
Methylene Chloride	(ug/l)	5	ND	ND	ND	ND	ND
Acetone	(ug/l)	3700	ND	ND	ND	ND	ND
Carbon Disulfide	(ug/l)	1900	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	(ug/l)	100	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	(ug/l)	2800	ND	ND	ND	ND	ND
Bromodichloromethane	(ug/l)	100	ND	ND	ND	ND	ND
4-Methyl-2-pentanone	(ug/l)	--	ND	ND	ND	ND	ND
2-Hexanone	(ug/l)	--	ND	ND	ND	ND	ND
Dibromochloromethane	(ug/l)	--	ND	ND	ND	ND	ND
Bromoform	(ug/l)	100	ND	ND	ND	ND	ND

NOTES:

-- = No criteria available.

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ND =Not Detected.

Table 3  
Boyertown Sanitary Disposal Landfill  
TIEC Data  
Monitoring Well Locations  
Volatile Organic Compounds

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-12 5/19/2005	AMW-1 5/17/2005	AMW-1 DUP 5/17/2005	TRIP BLANK 5/19/2005
COLLECTION DATE						
Chloromethane	(ug/l)	3	ND	ND	ND	ND
Vinyl Chloride	(ug/l)	2	ND	2.00	ND	ND
Bromoethane	(ug/l)	10	ND	ND	ND	ND
Chloroethane	(ug/l)	230	ND	1.10	ND	ND
1,1-Dichloroethene	(ug/l)	7	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	27	ND	ND	ND	ND
cis-1,2-Dichloroethene	(ug/l)	70	ND	50.00	48.00	ND
Chloroform	(ug/l)	100	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	200	ND	ND	ND	ND
Carbon Tetrachloride	(ug/l)	5	ND	ND	ND	ND
Benzene	(ug/l)	5	ND	ND	ND	ND
1,2-Dichloroethane	(ug/l)	5	ND	ND	ND	ND
Trichloroethene	(ug/l)	5	ND	26.00	21.00	ND
1,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND
cis-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
Toluene	(ug/l)	1000	ND	ND	ND	ND
trans-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
1,1,2-Trichloroethane	(ug/l)	5	ND	ND	ND	ND
Tetrachloroethene	(ug/l)	5	ND	ND	ND	ND
Chlorobenzene	(ug/l)	100	ND	0.37	ND	ND
Ethyl Benzene	(ug/l)	700	ND	ND	ND	ND
m,p-Xylene	(ug/l)	10000	ND	ND	ND	ND
o-Xylene	(ug/l)	10000	ND	ND	ND	ND
Styrene	(ug/l)	100	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND
Methylene Chloride	(ug/l)	5	ND	ND	ND	ND
Acetone	(ug/l)	3700	ND	ND	ND	ND
Carbon Disulfide	(ug/l)	1900	ND	ND	ND	ND
trans-1,2-Dichloroethene	(ug/l)	100	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	(ug/l)	2800	ND	ND	ND	ND
Bromodichloromethane	(ug/l)	100	ND	ND	ND	ND
4-Methyl-2-pentanone	(ug/l)	--	ND	ND	ND	ND
2-Hexanone	(ug/l)	--	ND	ND	ND	ND
Dibromochloromethane	(ug/l)	--	ND	ND	ND	ND
Bromoform	(ug/l)	100	ND	ND	ND	ND

**NOTES:**

-- = No criteria available.

J=The reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

ND =Not Detected.

Table 4  
Boyertown Sanitary Disposal Landfill  
PADEP Data  
Monitoring Well Locations  
Volatile Organic Compounds

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	SWM-1 5/17/2005	MW-5 5/19/2005	MW-6 5/17/2005	MW-7 5/17/2005	MW-8 5/17/2005	MW-9 5/17/2005
COLLECTION DATE								
Chloromethane	(ug/l)	3	ND	ND	ND	ND	ND	ND
Bromoethane	(ug/l)	10	ND	ND	ND	ND	ND	ND
Chloroethene	(ug/l)	230	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	(ug/l)	7	ND	ND	ND	ND	ND	ND
1,1-Dichloroethane	(ug/l)	27	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	(ug/l)	70	ND	ND	ND	ND	0.77	ND
Chloroform	(ug/l)	100	ND	ND	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	200	ND	ND	ND	ND	ND	ND
Carbon Tetrachloride	(ug/l)	5	ND	ND	ND	ND	ND	ND
Benzene	(ug/l)	5	ND	ND	ND	ND	ND	ND
1,2-Dichloroethane	(ug/l)	5	ND	ND	ND	ND	ND	ND
Trichloroethene	(ug/l)	5	ND	ND	ND	ND	ND	ND
2,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND	ND	ND
1,1-Dichloropropene	(ug/l)	--	ND	ND	ND	ND	ND	ND
Toluene	(ug/l)	1000	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropane	(ug/l)	6.6	ND	ND	ND	ND	ND	ND
1,1,2-Trichloroethane	(ug/l)	5	ND	ND	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	(ug/l)	0.05	ND	ND	ND	ND	ND	ND
Chlorobenzene	(ug/l)	100	ND	ND	ND	ND	0.38	ND
Ethylbenzene	(ug/l)	700	ND	ND	ND	ND	ND	ND
m,p-Xylene	(ug/l)	10000	ND	ND	ND	ND	ND	ND
o-Xylene	(ug/l)	10000	ND	ND	ND	ND	ND	ND
Styrene	(ug/l)	100	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND	ND	ND
1,3,5-Trimethylbenzene	(ug/l)	16	ND	ND	ND	ND	ND	ND
1,2,4-Trimethylbenzene	(ug/l)	16	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	(ug/l)	600	0.3 JB	ND	0.21 JB	0.28 JB	0.36 JB	ND
1,4-Dichlorobenzene	(ug/l)	--	ND	ND	ND	ND	0.17 JB	ND
p-Chlorotoluene	(ug/l)	--	ND	ND	ND	ND	ND	ND
1,3-Dichlorobenzene	(ug/l)	600	ND	ND	ND	ND	ND	ND
Methylene Chloride	(ug/l)	5	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	(ug/l)	70	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	(ug/l)	1	ND	ND	ND	ND	ND	ND
1,2,4-Trichlorobenzene	(ug/l)	3700	ND	ND	ND	ND	ND	3.0 J
Carbon Disulfide	(ug/l)	1900	ND	ND	ND	ND	ND	ND
trans-1,2-Dichloroethene	(ug/l)	100	ND	ND	ND	ND	ND	ND
Vinyl Acetate	(ug/l)	550	ND	ND	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	(ug/l)	2800	ND	3.30	ND	ND	ND	ND
Tetrahydrofuran	(ug/l)	--	ND	1.70	ND	ND	ND	0.77 JB
Bromodichloromethane	(ug/l)	100	ND	ND	ND	ND	ND	ND
2-Hexanone	(ug/l)	--	ND	2.60	ND	ND	ND	ND
Dibromochloromethane	(ug/l)	--	ND	ND	ND	ND	ND	ND
Bromoform	(ug/l)	100	ND	ND	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	(ug/l)	0.2	ND	ND	ND	ND	ND	ND
Tetrachloroethene	(ug/l)	5	ND	ND	ND	ND	ND	ND
n-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND	ND	ND
o-Chlorotoluene	(ug/l)	100	ND	ND	ND	ND	ND	ND
MIBK	(ug/l)	190	ND	ND	ND	ND	ND	ND
Tert-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND	ND	ND
1,2,3-Trichloropropane	(ug/l)	40	ND	ND	ND	ND	ND	ND
1,2,3-Trichlorobenzene	(ug/l)	--	ND	ND	ND	ND	ND	ND
Dibromomethane	(ug/l)	97	ND	ND	ND	ND	ND	ND
cis-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND	ND	ND
Sec-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND	ND	ND
1,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND	ND	ND
trans-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND	ND	ND
Dichlorodifluoromethane	(ug/l)	1000	ND	ND	ND	ND	ND	ND
PCTFB	(ug/l)	--	ND	7.6 J	ND	ND	ND	ND
Chloroethane	(ug/l)	230	ND	ND	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND	ND	ND
4-Isopropyltoluene	(ug/l)	--	ND	ND	ND	ND	ND	ND
Trichlorofluoromethane	(ug/l)	--	ND	ND	ND	ND	ND	ND
Bromobenzene	(ug/l)	--	ND	ND	ND	ND	ND	ND
n-Propylbenzene	(ug/l)	1500	ND	ND	ND	ND	ND	ND
Methyl tert-butyl ether	(ug/l)	20	0.98	ND	ND	ND	0.46	ND
Isopropylbenzene	(ug/l)	--	ND	ND	ND	ND	ND	ND
Naphthalene	(ug/l)	100	ND	ND	ND	ND	ND	ND

NOTES:

-- = No criteria available.

J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

ND = Not Detected.

B = Found In Blank.

Table 4  
Boyertown Sanitary Disposal Landfill  
PADEP Data  
Monitoring Well Locations  
Volatile Organic Compounds

SAMPLE IDENTIFICATION		PADEP Residential Medium-Specific Concentrations (MSCs) Used Aquifer, TDS<2,500	MW-10 5/19/2005	MW-11 5/19/2005	MW-12 5/19/2005	AMW-1 5/17/2005
COLLECTION DATE						
Chloromethane	(ug/l)	3	ND	ND	ND	0.61
Bromoethane	(ug/l)	10	ND	ND	ND	ND
Chloroethane	(ug/l)	230	ND	ND	ND	1.2
1,1-Dichloroethene	(ug/l)	7	ND	ND	ND	ND
1,1-Dichloroethane	(ug/l)	27	ND	ND	ND	ND
cis-1,2-Dichloroethene	(ug/l)	70	ND	ND	ND	38.70
Chloroform	(ug/l)	100	ND	ND	ND	ND
1,1,1-Trichloroethane	(ug/l)	200	ND	ND	ND	ND
Carbon Tetrachloride	(ug/l)	5	ND	ND	ND	ND
Benzene	(ug/l)	5	ND	ND	ND	ND
1,2-Dichloroethane	(ug/l)	5	ND	ND	ND	ND
Trichloroethene	(ug/l)	5	ND	ND	ND	19.60
2,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND
1,1-Dichloropropene	(ug/l)	--	ND	ND	ND	ND
Toluene	(ug/l)	1000	ND	ND	ND	ND
trans-1,3-Dichloropropane	(ug/l)	6.6	ND	ND	ND	ND
1,1,2-Trichloroethane	(ug/l)	5	ND	ND	ND	ND
1,2-Dibromoethane (EDB)	(ug/l)	0.05	ND	ND	ND	ND
Chlorobenzene	(ug/l)	100	ND	ND	ND	0.27
Ethylbenzene	(ug/l)	700	ND	ND	ND	ND
m,p-Xylene	(ug/l)	10000	ND	ND	ND	ND
o-Xylene	(ug/l)	10000	ND	ND	ND	ND
Styrene	(ug/l)	100	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND
1,3,5-Trimethylbenzene	(ug/l)	16	ND	ND	ND	ND
1,2,4-Trimethylbenzene	(ug/l)	16	ND	ND	ND	ND
1,2-Dichlorobenzene	(ug/l)	600	ND	ND	ND	0.31 JB
1,4-Dichlorobenzene	(ug/l)	--	ND	ND	ND	0.18 JB
p-Chlorotoluene	(ug/l)	--	ND	ND	ND	ND
1,3-Dichlorobenzene	(ug/l)	600	ND	ND	ND	ND
Methylene Chloride	(ug/l)	5	ND	ND	ND	ND
1,2,4-Trichlorobenzene	(ug/l)	70	ND	ND	ND	ND
Hexachlorobutadiene	(ug/l)	1	ND	ND	ND	ND
Acetone	(ug/l)	3700	4.1 J	4.0 J	3.7J	ND
Carbon Disulfide	(ug/l)	1900	ND	ND	ND	ND
trans-1,2-Dichloroethene	(ug/l)	100	ND	ND	ND	ND
Vinyl Acetate	(ug/l)	550	ND	ND	ND	ND
2-Butanone (Methyl Ethyl Ketone)	(ug/l)	2800	ND	ND	ND	ND
Tetrahydrofuran	(ug/l)	--	1.0 JB	1.3 JB	1.2JB	2.60
Bromodichloromethane	(ug/l)	100	ND	ND	ND	ND
2-Hexanone	(ug/l)	--	ND	ND	ND	ND
Dibromochloromethane	(ug/l)	--	ND	ND	ND	ND
Bromoform	(ug/l)	100	ND	ND	ND	ND
1,2-Dibromo-3-chloropropane	(ug/l)	0.2	ND	ND	ND	ND
Tetrachloroethene	(ug/l)	5	ND	ND	ND	ND
n-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND
o-Chlorotoluene	(ug/l)	100	ND	ND	ND	ND
MIBK	(ug/l)	190	ND	ND	ND	ND
Tert-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND
1,2,3-Trichloropropane	(ug/l)	40	ND	ND	ND	ND
1,2,3-Trichlorobenzene	(ug/l)	--	ND	ND	ND	ND
Dibromomethane	(ug/l)	97	ND	ND	ND	ND
cis-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
Sec-Butylbenzene	(ug/l)	1500	ND	ND	ND	ND
1,2-Dichloropropane	(ug/l)	5	ND	ND	ND	ND
trans-1,3-Dichloropropene	(ug/l)	6.6	ND	ND	ND	ND
Dichlorodifluoromethane	(ug/l)	1000	ND	ND	ND	ND
PCTFB	(ug/l)		ND	ND	ND	ND
Chloroethane	(ug/l)	230	ND	ND	ND	ND
1,1,2,2-Tetrachloroethane	(ug/l)	0.3	ND	ND	ND	ND
4-Isopropyltoluene	(ug/l)	--	ND	ND	ND	ND
Trichlorofluoromethane	(ug/l)	--	ND	ND	ND	0.77
Bromobenzene	(ug/l)	--	ND	ND	ND	ND
n-Propylbenzene	(ug/l)	1500	ND	ND	ND	ND
Methyl tert-butyl ether	(ug/l)	20	ND	ND	ND	ND
Isopropylbenzene	(ug/l)	--	ND	ND	ND	ND
Naphthalene	(ug/l)	100	ND	ND	ND	ND

NOTES:

-- = No criteria available.

J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit, but greater than or equal to the Instrument Detection Limit.

ND = Not Detected.

B = Found in Blank.

## **APPENDICES**



## **APPENDIX A**

### **Purging Records**

Boyertown Sanitary Disposal Landfill  
Purge Logs

Sample Collection Date	5/17/2005
Monitoring Well ID	MW-6
Depth to water	13.34
Depth to bottom	48.15
Water Column	34.81
Well Diameter	4.00"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
0857	4.00	4.52	1.1	9.52	17.12		291	0.23
0910	6.57	0.36	104.0	4.00	14.37		201	
0913	6.34	0.36	71.4	3.1	13.76		157	
0917	7.13	0.365	68.1	2.85	13.72		155	
0920	7.18	0.364	129.0	2.71	13.56		150	
0923	7.22	0.36	212.0	2.95	13.55		146	
0927	7.25	0.365	942.0	3.21	13.71		143	
0930	7.39	0.385	569.0	5.72	16.47		139	
0933	7.42	0.375	570.0	6.79	16.17		139	
0937	7.42	0.383	390.0	7.12	16.75		137	
0940	7.44	0.396	247.0	8.35	16.99		118	
0943	7.45	0.395	208.0	8.38	17.28		104	
0947	7.45	0.396	160.0	8.29	17.64		99	

Sample Collection Date	5/17/2005
Monitoring Well ID	AMW-1
Depth to water	8.2
Depth to bottom	64.2
Water Column	56
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1035	7.08	1.57	107.0	0.64	14.65		166	
1040	6.91	1.61	23.3	0	14.62		135	
1045	6.97	1.62	13.1	0	14.38		117	
1050	7.03	1.59	9.6	0	14.32		88	
1055	7.14	1.59	7.5	0	14.56		65	
1100	7.17	1.64	2.6	0.2	14.68		74	
1105	7.23	1.63	0.1	2.19	14.77		79	

Sample Collection Date	5/17/05
Monitoring Well ID	MW-7
Depth to water	9.15
Depth to bottom	44
Water Column	34.85
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1203	7.49	0.584	18.3	0	12.31		111	
1205	7.49	0.586	17.3	0	13.9		70	
1210	7.49	0.586	14.3	0	13.72		56	
1215	7.46	0.593	11.3	0	13.62		-13	

Boyertown Sanitary Disposal Landfill  
Purge Logs

Sample Collection Date	5/17/2005
Monitoring Well ID	MW-8
Depth to water	22.45
Depth to bottom	
Water Column	-22.45
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1320	7.45	0.694	60.3	0.73	14.53		73	
1325	7.44	0.638	4.7	0	14.56		43	
1330	7.40	0.649	6.5	0	14.59		41	
1335	7.39	0.666	7.3	0	14.59		42	
1340	7.36	0.743	13.4	0	14.71		41	
1350	7.31	0.756	21.4	0	14.71		43	

Sample Collection Date	5/19/2005
Monitoring Well ID	MW-5
Depth to water	25.34
Depth to bottom	88
Water Column	62.66
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
900	7.06	0.513	163.0	1.5	14.58		104	
910	7.40	0.507	7.2	1.48	14.86		73	
917	7.42	0.502	4.0	1.98	14.87		67	
927	7.41	0.514	52.6	1.05	15.03		56	
937	7.40	0.513	36.3	0.49	15.04		52	
945	7.50	0.464	999.0	0.91	17.3		39	

Sample Collection Date	5/19/2005
Monitoring Well ID	MW-1
Depth to water	27.94
Depth to bottom	61
Water Column	33.06
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1040	7.54	0.287	159	7.68	13.47		113	
1045	7.13	0.286	94	6.04	13.54		108	
1050	7.09	0.285	49	5.71	13.55		104	
1055	7.08	0.278	377	5.4	13.7		102	

Boyertown Sanitary Disposal Landfill  
Purge Logs

Sample Collection Date	5/19/2005
Monitoring Well ID	MW-12
Depth to water	10.6
Depth to bottom	73
Water Column	62.4
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1330	7.67	0.321	197.0	0	13.32		111	
1335	7.58	0.32	86.2	0	12.91		101	
1340	7.48	0.313	112.0	0	12.54		90	
1345	7.54	0.319	121.0	0	12.89		71	
1350	7.57	0.33	166.0	0	13.37		62	

Sample Collection Date	5/19/2005
Monitoring Well ID	MW-10
Depth to water	25
Depth to bottom	75
Water Column	50
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1440	7.45	0.341	0.4	3.45	13.32		40	
1445	6.99	0.343	0.2	1.13	13.29		60	
1450	6.97	0.346	245.0	1.11	13.32		50	
1455	6.97	0.347	392.0	1.01	13.35		67	
1500	6.99	0.348	598.0	1.01	13.40		70	
1505	6.99	0.348	874.0	1.21	13.45		78	

Sample Collection Date	5/19/2005
Monitoring Well ID	MW-9
Depth to water	15.81
Depth to bottom	52.5
Water Column	38.52'
Well Diameter	4"

Time	pH pH Units	Conductivity	Turbidity NTU	Dissolved Oxygen	Temperature Degrees C	DEP	ORP	Salinity
1605	7.45	0.322	433	2.43	13.22		115	
1610	7.29	0.321	330	1.12	13.27		108	
1615	7.29	0.322	999	1.27	13.99		103	
1620	7.31	0.312	999	1.18	13.33		98	
1625	7.40	0.32	999	1.19	13.38		96	

**APPENDIX B**

**PADEP Laboratory Data Package**

"Wilson, Jennifer" <jewilson@state.pa.us>

06/30/2005 04:08 PM

To

<Roxanne.Clarke@tteci.com>

cc

Subject

I211905192005122-20.DOC

06/11/2005 12:30:07 AM

DEP Bureau of Laboratories  
Analytical Report For  
Land Recycling & Waste Management

Page: 001

Sample ID: 2119 122 05/19/2005

Status: COMPLETED

Collector: Jennifer A Wilson

Collected: 05/19/2005 04:00:00 PM

County: Montgomery

State: PA

Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL

300 MERKEL ROAD

GILBERTSVILLE PA 19525-

Sample Medium: Water

Ground Water

Location: MW-9

Reason: Routine Sampling

Sample taken before well was completely purged.

Laboratory Sample ID: I2005018590

COMPLETED

Standard Analysis: 210

Legal Seal: F007211 Intact: YES

Legal Seal: F007212 Intact: YES

Legal Seal: F007213 Intact: YES

Legal Seal: F007214 Intact: YES

Legal Seal: F007215 Intact: YES

Legal Seal: F007216 Intact: YES

Legal Seal: F007217 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	11100.000 UG/L	05/24/2005
01046A IRON D	<20 UG/L	05/24/2005
00410 ALKALINITY	194.2 MG/L	05/20/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	<20.0 MG/L	06/03/2005
70353 T ORG HALIDE	<5 UG/L	05/25/2005
00918A CALCIUM R	61.300 MG/L	05/24/2005
00915A CALCIUM D	58.500 MG/L	05/24/2005
00095 SPC @ 25.0 C	398.00 umhos/cm	05/20/2005
01040A COPPER D	<10 UG/L	05/24/2005
01119A COPPER R	21.000 UG/L	05/24/2005
01030H CHROMIUM D	<4 UG/L	05/25/2005
01118H CHROMIUM R	14.800 UG/L	05/25/2005
82079 TURBIDITY	458.00 NTU	05/24/2005
00610A AMMONIA-N T	<.02 MG/L	06/03/2005
00340 COD	<10.0 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/24/2005
01079A SILVER R	<10 UG/L	05/24/2005
00951 FLUORIDE T	0.20 MG/L	05/26/2005

06/11/2005 12:30:07 AM

DEP Bureau of Laboratories  
Analytical Report For  
Land Recycling & Waste Management

Page: 002

Sample ID: 2119 122 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
71890X MERCURY D	<1 UG/L	05/24/2005
71901X MERCURY R	<1 UG/L	05/24/2005
00923A SODIUM R	7.210 MG/L	05/24/2005
00930A SODIUM D	6.930 MG/L	05/24/2005
00403 pH	7.5 pH units	05/20/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/24/2005
01123A MANGANESE R	359.000 UG/L	05/24/2005
01113H CADMIUM R	0.350 UG/L	05/25/2005
01025H CADMIUM D	<.20 UG/L	05/25/2005
01114H LEAD TOT R	6.700 UG/L	05/25/2005
01049H LEAD D	<1.0 UG/L	05/25/2005
00515 TDS @105 C	304. MG/L	05/24/2005
01094A ZINC R	47.000 UG/L	05/24/2005
01090A ZINC D	<10.0 UG/L	05/24/2005
00620A Nitrate-N	0.95 MG/L	05/24/2005
00935A POTASSIUM D	1.120 MG/L	05/24/2005
00939A POTASSIUM R	3.790 MG/L	05/24/2005
01009A BARIUM R	350.000 UG/L	05/24/2005

01005A	BARIUM D	171.000 UG/L	05/24/2005
00978H	ARSENIC R	<4.0 UG/L	05/25/2005
01000H	ARSENIC D	<4.0 UG/L	05/25/2005
00680	T ORG CARBON	3.03 MG/L	06/02/2005
32730D	Phenols-Dist	<5.0 UG/L	06/09/2005
00921A	MAGNESIUM R	18.300 MG/L	05/24/2005
00925A	MAGNESIUM D	13.800 MG/L	05/24/2005
01145H	SELENIUM D	<7 UG/L	05/25/2005
00981H	SELENIUM R	<7 UG/L	05/25/2005
00940A	CHLORIDE	4.1 MG/L	06/03/2005



06/06/2005 12:30:02 AM

DEP Bureau of Laboratories  
Analytical Report For  
Land Recycling & Waste Management

Page: 001

Sample ID: 2119 114 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 11:00:00 AM

County: Montgomery  
Municipality: Douglass Twp

State: PA

-----  
BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
-----

Sample Medium: Water /  
Ground Water

Location: SMW-1  
Reason: Routine Sampling

Laboratory Sample ID: I2005018095 COMPLETED  
Standard Analysis: 210

Legal Seal: E035866 Intact: YES  
Legal Seal: E035867 Intact: YES  
Legal Seal: E035868 Intact: YES  
Legal Seal: E035869 Intact: YES  
Legal Seal: E035870 Intact: YES  
Legal Seal: E035871 Intact: YES  
Legal Seal: E035872 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	54.000 UG/L	05/19/2005
01046A IRON D	30.000 UG/L	05/19/2005
00410 ALKALINITY	396.4 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	26.2 MG/L	05/25/2005
70353 T ORG HALIDE	71.44 UG/L	05/20/2005
00918A CALCIUM R	156.000 MG/L	05/19/2005
00915A CALCIUM D	162.000 MG/L	05/19/2005
00095 SPC @ 25.0 C	1522.00 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	11.000 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/24/2005
01118H CHROMIUM R	<4.0 UG/L	05/24/2005
82079 TURBIDITY	<1 NTU	05/19/2005
00610A AMMONIA-N T	0.05 MG/L	05/26/2005
00340 COD	25.3 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005

00923A SODIUM R

89.500 MG/L

05/19/2005

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Sample ID: 2119 114 05/17/2005 Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	92.400 MG/L	05/19/2005
00403 pH	7.3 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	912.000 UG/L	05/19/2005
01123A MANGANESE R	950.000 UG/L	05/19/2005
01113H CADMIUM R	<.2 UG/L	05/24/2005
01025H CADMIUM D	<.20 UG/L	05/24/2005
01114H LEAD TOT R	<1.0 UG/L	05/24/2005
01049H LEAD D	<1.0 UG/L	05/24/2005
00515 TDS @105 C	1020. MG/L	05/19/2005
01094A ZINC R	16.000 UG/L	05/19/2005
01090A ZINC D	<10.0 UG/L	05/19/2005
00620A Nitrate-N	2.76 MG/L	05/20/2005
00935A POTASSIUM D	2.110 MG/L	05/19/2005
00939A POTASSIUM R	2.390 MG/L	05/19/2005
01009A BARIUM R	505.000 UG/L	05/19/2005
01005A BARIUM D	492.000 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/24/2005
01000H ARSENIC D	<4.0 UG/L	05/24/2005
00680 T ORG CARBON	5.76 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	46.500 MG/L	05/19/2005
00925A MAGNESIUM D	45.400 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/24/2005
00981H SELENIUM R	<7 UG/L	05/24/2005
00940A CHLORIDE	272.9 MG/L	06/03/2005

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Sample ID: 2119 115 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 12:30:00 PM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-7  
Reason: Routine Sampling

Laboratory Sample ID: I2005018096 COMPLETED  
Standard Analysis: 210

Legal Seal: E035874 Intact: YES  
Legal Seal: E035875 Intact: YES  
Legal Seal: E035876 Intact: YES  
Legal Seal: E035877 Intact: YES  
Legal Seal: E035878 Intact: YES  
Legal Seal: E035879 Intact: YES  
Legal Seal: E035880 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	36.000 UG/L	05/19/2005
01046A IRON D	<20 UG/L	05/19/2005
00410 ALKALINITY	204.2 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	<20.0 MG/L	05/25/2005
70353 T ORG HALIDE	17.79 UG/L	05/20/2005
00918A CALCIUM R	84.800 MG/L	05/19/2005
00915A CALCIUM D	82.400 MG/L	05/19/2005
00095 SPC @ 25.0 C	753.00 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	<10 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/24/2005
01118H CHROMIUM R	<4.0 UG/L	05/24/2005
82079 TURBIDITY	1.40 NTU	05/19/2005
00610A AMMONIA-N T	0.10 MG/L	05/26/2005
00340 COD	14.8 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005

00923A SODIUM R

25.300 MG/L

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Sample ID: 2119 115 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	25.200 MG/L	05/19/2005
00403 pH	7.6 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	433.000 UG/L	05/19/2005
01123A MANGANESE R	429.000 UG/L	05/19/2005
01113H CADMIUM R	<.2 UG/L	05/24/2005
01025H CADMIUM D	<.20 UG/L	05/24/2005
01114H LEAD TOT R	<1.0 UG/L	05/24/2005
01049H LEAD D	<1.0 UG/L	05/24/2005
00515 TDS @105 C	534. MG/L	05/19/2005
01094A ZINC R	<10.0 UG/L	05/19/2005
01090A ZINC D	<10.0 UG/L	05/19/2005
00620A Nitrate-N	0.65 MG/L	05/20/2005
00935A POTASSIUM D	2.170 MG/L	05/19/2005
00939A POTASSIUM R	2.180 MG/L	05/19/2005
01009A BARIUM R	529.000 UG/L	05/19/2005
01005A BARIUM D	530.000 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/24/2005
01000H ARSENIC D	<4.0 UG/L	05/24/2005
00680 T ORG CARBON	3.82 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	24.800 MG/L	05/19/2005
00925A MAGNESIUM D	24.300 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/24/2005
00981H SELENIUM R	<7 UG/L	05/24/2005
00940A CHLORIDE	118.6 MG/L	06/03/2005

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Sample ID: 2119 116 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 02:00:00 PM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-8  
Reason: Routine Sampling

Laboratory Sample ID: I2005018081 COMPLETED  
Standard Analysis: 210

Legal Seal: E035890 Intact: YES  
Legal Seal: E035891 Intact: YES  
Legal Seal: E035892 Intact: YES  
Legal Seal: E035893 Intact: YES  
Legal Seal: E035894 Intact: YES  
Legal Seal: E035895 Intact: YES  
Legal Seal: E035896 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	507.000 UG/L	05/19/2005
01046A IRON D	<20 UG/L	05/19/2005
00410 ALKALINITY	332.8 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	21.6 MG/L	05/25/2005
70353 T ORG HALIDE	16.51 UG/L	05/20/2005
00918A CALCIUM R	103.000 MG/L	05/19/2005
00915A CALCIUM D	104.000 MG/L	05/19/2005
00095 SPC @ 25.0 C	942.00 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	<10 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/18/2005
01118H CHROMIUM R	<4.0 UG/L	05/18/2005
82079 TURBIDITY	19.29 NTU	05/19/2005
00610A AMMONIA-N T	<.02 MG/L	05/26/2005
00340 COD	10.7 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005

00923A SODIUM R

14.100 MG/L

05/19/2005



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Sample ID: 2119 116 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	14.200 MG/L	05/19/2005
00403 pH	7.4 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	12.000 UG/L	05/19/2005
01123A MANGANESE R	24.000 UG/L	05/19/2005
01113H CADMIUM R	<.2 UG/L	05/18/2005
01025H CADMIUM D	<.20 UG/L	05/18/2005
01114H LEAD TOT R	<1.0 UG/L	05/18/2005
01049H LEAD D	<1.0 UG/L	05/18/2005
00515 TDS @105 C	642. MG/L	05/19/2005
01094A ZINC R	<10.0 UG/L	05/19/2005
01090A ZINC D	<10.0 UG/L	05/19/2005
00620A Nitrate-N	0.84 MG/L	05/20/2005
00935A POTASSIUM D	1.662 MG/L	05/19/2005
00939A POTASSIUM R	1.933 MG/L	05/19/2005
01009A BARIUM R	1380.000 UG/L	05/19/2005
01005A BARIUM D	1350.000 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/18/2005
01000H ARSENIC D	<4.0 UG/L	05/18/2005
00680 T ORG CARBON	2.58 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	42.400 MG/L	05/19/2005
00925A MAGNESIUM D	42.600 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/18/2005
00981H SELENIUM R	<7 UG/L	05/18/2005
00940A CHLORIDE	117.5 MG/L	06/03/2005

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Sample ID: 2119 117 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 01:30:00 PM

County: Montgomery  
Municipality: Douglass Twp

State: PA

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water  
Ground Water

Location: field blank  
Reason: Routine Sampling

Laboratory Sample ID: I2005018082  
Standard Analysis: 210

COMPLETED

Legal Seal: E035882 Intact: YES  
Legal Seal: E035883 Intact: YES  
Legal Seal: E035884 Intact: YES  
Legal Seal: E035885 Intact: YES  
Legal Seal: E035886 Intact: YES  
Legal Seal: E035887 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	<20 UG/L	05/19/2005
01046A IRON D	<20 UG/L	05/19/2005
00410 ALKALINITY	1.2 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	<20.0 MG/L	05/25/2005
70353 T ORG HALIDE	<5 UG/L	05/20/2005
00918A CALCIUM R	<.03 MG/L	05/19/2005
00915A CALCIUM D	<0.03 MG/L	05/19/2005
00095 SPC @ 25.0 C	1.24 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	<10 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/18/2005
01118H CHROMIUM R	<4.0 UG/L	05/18/2005
82079 TURBIDITY	<1 NTU	05/19/2005
00610A AMMONIA-N T	<.02 MG/L	05/26/2005
00340 COD	<10.0 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005
00923A SODIUM R	0.048 MG/L	05/19/2005

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Sample ID: 2119 117 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	<.2 MG/L	05/19/2005
00403 pH	6.3 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/19/2005
01123A MANGANESE R	<10.00 UG/L	05/19/2005
01113H CADMIUM R	<.2 UG/L	05/18/2005
01025H CADMIUM D	<.20 UG/L	05/18/2005
01114H LEAD TOT R	<1.0 UG/L	05/18/2005
01049H LEAD D	<1.0 UG/L	05/18/2005
00515 TDS @105 C	14. MG/L	05/19/2005
01094A ZINC R	<10.0 UG/L	05/19/2005
01090A ZINC D	<10.0 UG/L	05/19/2005
00620A Nitrate-N	<.04 MG/L	05/20/2005
00935A POTASSIUM D	<1.00 MG/L	05/19/2005
00939A POTASSIUM R	<1.00 MG/L	05/19/2005
01009A BARIUM R	<10 UG/L	05/19/2005
01005A BARIUM D	<10.0 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/18/2005
01000H ARSENIC D	<4.0 UG/L	05/18/2005
00680 T ORG CARBON	<0.50 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	<.01 MG/L	05/19/2005
00925A MAGNESIUM D	<0.01 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/18/2005
00981H SELENIUM R	<7 UG/L	05/18/2005
00940A CHLORIDE	<1.0 MG/L	06/03/2005

Sample ID: 2119 124 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 08:45:00 AM

County: Montgomery State: PA  
Municipality: Douglass Twp

-----  
BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
-----

Sample Medium: Water /  
Ground Water

Location: AMW-1  
Reason: Routine Sampling

Laboratory Sample ID: I2005018083 COMPLETED  
Standard Analysis: 210

Legal Seal: E035850 Intact: YES  
Legal Seal: E035851 Intact: YES  
Legal Seal: E035852 Intact: YES  
Legal Seal: E035853 Intact: YES  
Legal Seal: E035854 Intact: YES  
Legal Seal: E035855 Intact: YES  
Legal Seal: E035856 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	<20 UG/L	05/19/2005
01046A IRON D	20.000 UG/L	05/19/2005
00410 ALKALINITY	368.4 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	22.1 MG/L	05/25/2005
70353 T ORG HALIDE	67.91 UG/L	05/20/2005
00918A CALCIUM R	96.400 MG/L	05/19/2005
00915A CALCIUM D	95.200 MG/L	05/19/2005
00095 SPC @ 25.0 C	858.00 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	<10 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/18/2005
01118H CHROMIUM R	<4.0 UG/L	05/18/2005
82079 TURBIDITY	<1 NTU	05/19/2005
00610A AMMONIA-N T	<.02 MG/L	05/26/2005
00340 COD	<10.0 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005

00923A SODIUM R

15.100 MG/L

05/19/2005

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Sample ID: 2119 124 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	15.000 MG/L	05/19/2005
00403 pH	7.4 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/19/2005
01123A MANGANESE R	<10.00 UG/L	05/19/2005
01113H CADMIUM R	0.300 UG/L	05/18/2005
01025H CADMIUM D	0.300 UG/L	05/18/2005
01114H LEAD TOT R	2.300 UG/L	05/18/2005
01049H LEAD D	2.300 UG/L	05/18/2005
00515 TDS @105 C	558. MG/L	05/19/2005
01094A ZINC R	1160.000 UG/L	05/19/2005
01090A ZINC D	1150.000 UG/L	05/19/2005
00620A Nitrate-N	1.08 MG/L	05/20/2005
00935A POTASSIUM D	1.331 MG/L	05/19/2005
00939A POTASSIUM R	1.323 MG/L	05/19/2005
01009A BARIUM R	826.000 UG/L	05/19/2005
01005A BARIUM D	819.000 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/18/2005
01000H ARSENIC D	<4.0 UG/L	05/18/2005
00680 T ORG CARBON	2.96 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	39.200 MG/L	05/19/2005
00925A MAGNESIUM D	38.700 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/18/2005
00981H SELENIUM R	<7 UG/L	05/18/2005
00940A CHLORIDE	67.5 MG/L	06/03/2005

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Sample ID: 2119 125 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 09:30:00 AM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-6  
Reason: Routine Sampling

Laboratory Sample ID: I2005018084 COMPLETED  
Standard Analysis: 210

Legal Seal: E035858 Intact: YES  
Legal Seal: E035859 Intact: YES  
Legal Seal: E035860 Intact: YES  
Legal Seal: E035861 Intact: YES  
Legal Seal: E035862 Intact: YES  
Legal Seal: E035863 Intact: YES  
Legal Seal: E035864 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	3130.000 UG/L	05/19/2005
01046A IRON D	23.000 UG/L	05/19/2005
00410 ALKALINITY	224.8 MG/L	05/18/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	23.9 MG/L	05/25/2005
70353 T ORG HALIDE	7.44 UG/L	05/20/2005
00918A CALCIUM R	57.700 MG/L	05/19/2005
00915A CALCIUM D	57.700 MG/L	05/19/2005
00095 SPC @ 25.0 C	498.00 umhos/cm	05/18/2005
01040A COPPER D	<10 UG/L	05/19/2005
01119A COPPER R	10.000 UG/L	05/19/2005
01030H CHROMIUM D	<4 UG/L	05/18/2005
01118H CHROMIUM R	5.500 UG/L	05/18/2005
82079 TURBIDITY	85.40 NTU	05/19/2005
00610A AMMONIA-N T	<.02 MG/L	05/26/2005
00340 COD	<10.0 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/19/2005
01079A SILVER R	<10 UG/L	05/19/2005
00951 FLUORIDE T	<0.20 MG/L	05/24/2005
71890X MERCURY D	<1 UG/L	05/19/2005
71901X MERCURY R	<1 UG/L	05/19/2005

00923A SODIUM R

10.837 MG/L

05/19/2005



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Sample ID: 2119 125 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	10.754 MG/L	05/19/2005
00403 pH	7.7 pH units	05/18/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/19/2005
01123A MANGANESE R	76.000 UG/L	05/19/2005
01113H CADMIUM R	<.2 UG/L	05/18/2005
01025H CADMIUM D	<.20 UG/L	05/18/2005
01114H LEAD TOT R	1.800 UG/L	05/18/2005
01049H LEAD D	<1.0 UG/L	05/18/2005
00515 TDS @105 C	328. MG/L	05/19/2005
01094A ZINC R	18.000 UG/L	05/19/2005
01090A ZINC D	<10.0 UG/L	05/19/2005
00620A Nitrate-N	3.64 MG/L	05/20/2005
00935A POTASSIUM D	3.107 MG/L	05/19/2005
00939A POTASSIUM R	4.519 MG/L	05/19/2005
01009A BARIUM R	409.000 UG/L	05/19/2005
01005A BARIUM D	364.000 UG/L	05/19/2005
00978H ARSENIC R	<4.0 UG/L	05/18/2005
01000H ARSENIC D	<4.0 UG/L	05/18/2005
00680 T ORG CARBON	1.28 MG/L	05/25/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	20.300 MG/L	05/19/2005
00925A MAGNESIUM D	19.700 MG/L	05/19/2005
01145H SELENIUM D	<7 UG/L	05/18/2005
00981H SELENIUM R	<7 UG/L	05/18/2005
00940A CHLORIDE	11.2 MG/L	06/03/2005

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Sample ID: 2119 118 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 09:30:00 AM

County: Montgomery  
Municipality: Douglass Twp

State: PA

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water  
Ground Water

Location: MW-5  
Reason: Routine Sampling

Well purged till dry

Appearance: turbid

Laboratory Sample ID: I2005018573  
Standard Analysis: 210

COMPLETED

Legal Seal: E035898 Intact: YES  
Legal Seal: E035899 Intact: YES  
Legal Seal: E035900 Intact: YES  
Legal Seal: E035901 Intact: YES  
Legal Seal: E035902 Intact: YES  
Legal Seal: E035903 Intact: YES  
Legal Seal: E035904 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	15400.000 UG/L	05/24/2005
01046A IRON D	<20 UG/L	05/24/2005
00410 ALKALINITY	316.6 MG/L	05/20/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	25.2 MG/L	06/03/2005
70353 T ORG HALIDE	<5 UG/L	05/24/2005
00918A CALCIUM R	135.000 MG/L	05/24/2005
00915A CALCIUM D	66.800 MG/L	05/24/2005
00095 SPC @ 25.0 C	568.00 umhos/cm	05/20/2005
01040A COPPER D	<10 UG/L	05/24/2005
01119A COPPER R	98.000 UG/L	05/24/2005
01030H CHROMIUM D	<4 UG/L	05/20/2005
01118H CHROMIUM R	29.400 UG/L	05/20/2005
82079 TURBIDITY	685.50 NTU	05/24/2005
00610A AMMONIA-N T	<.02 MG/L	06/03/2005
00340 COD	<10.0 MG/L	06/03/2005

01075A SILVER D

<10 UG/L

05/24/2005

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Sample ID: 2119 118 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
01079A SILVER R	<10 UG/L	05/24/2005
00951 FLUORIDE T	<0.20 MG/L	05/26/2005
71890X MERCURY D	<1 UG/L	05/24/2005
71901X MERCURY R	<1 UG/L	05/24/2005
00923A SODIUM R	14.100 MG/L	05/24/2005
00930A SODIUM D	12.800 MG/L	05/24/2005
00403 pH	7.6 pH units	05/20/2005
** Comment **	Time Limit For Test Exceeded	
01056A MANGANESE D	49.000 UG/L	05/24/2005
01123A MANGANESE R	1850.000 UG/L	05/24/2005
01113H CADMIUM R	0.300 UG/L	05/20/2005
01025H CADMIUM D	<.20 UG/L	05/20/2005
01114H LEAD TOT R	60.200 UG/L	05/20/2005
01049H LEAD D	<1.0 UG/L	05/20/2005
00515 TDS @105 C	478. MG/L	05/24/2005
01094A ZINC R	146.000 UG/L	05/24/2005
01090A ZINC D	<10.0 UG/L	05/24/2005
00620A Nitrate-N	1.24 MG/L	05/24/2005
00935A POTASSIUM D	1.320 MG/L	05/24/2005
00939A POTASSIUM R	4.210 MG/L	05/24/2005
01009A BARIUM R	685.000 UG/L	05/24/2005
01005A BARIUM D	370.000 UG/L	05/24/2005
00978H ARSENIC R	7.000 UG/L	05/20/2005
01000H ARSENIC D	<4.0 UG/L	05/20/2005
00680 T ORG CARBON	2.67 MG/L	06/02/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
00921A MAGNESIUM R	42.300 MG/L	05/24/2005
00925A MAGNESIUM D	28.300 MG/L	05/24/2005
01145H SELENIUM D	<7 UG/L	05/20/2005
00981H SELENIUM R	<7 UG/L	05/20/2005
00940A CHLORIDE	14.3 MG/L	06/03/2005

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Sample ID: 2119 119 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 11:15:00 AM

County: Montgomery  
Municipality: Douglass Twp

State: PA

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-11  
Reason: Routine Sampling  
  
Well purged till dry

Appearance: turbid

Laboratory Sample ID: I2005018574  
Standard Analysis: 210

COMPLETED

Legal Seal: E035906 Intact: YES  
Legal Seal: E035907 Intact: YES  
Legal Seal: E035908 Intact: YES  
Legal Seal: E035909 Intact: YES  
Legal Seal: E035910 Intact: YES  
Legal Seal: E035911 Intact: YES  
Legal Seal: E035912 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	10100.000 UG/L	05/24/2005
01046A IRON D	<20 UG/L	05/24/2005
00410 ALKALINITY	157.0 MG/L	05/20/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	<20.0 MG/L	06/03/2005
70353 T ORG HALIDE	<5 UG/L	05/24/2005
00918A CALCIUM R	61.000 MG/L	05/24/2005
00915A CALCIUM D	52.700 MG/L	05/24/2005
00095 SPC @ 25.0 C	339.00 umhos/cm	05/20/2005
01040A COPPER D	<10 UG/L	05/24/2005
01119A COPPER R	38.000 UG/L	05/24/2005
01030H CHROMIUM D	<4 UG/L	05/20/2005
01118H CHROMIUM R	28.900 UG/L	05/20/2005
82079 TURBIDITY	332.80 NTU	05/24/2005
00610A AMMONIA-N T	<.02 MG/L	06/03/2005
00340 COD	<10.0 MG/L	06/03/2005

01075A SILVER D

<10 UG/L

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Sample ID: 2119 119 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
01079A SILVER R	<10 UG/L	05/24/2005
00951 FLUORIDE T	<0.20 MG/L	05/26/2005
71890X MERCURY D	<1 UG/L	05/24/2005
71901X MERCURY R	<1 UG/L	05/24/2005
00923A SODIUM R	7.180 MG/L	05/24/2005
00930A SODIUM D	6.230 MG/L	05/24/2005
00403 pH	7.2 pH units	05/20/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/24/2005
01123A MANGANESE R	332.000 UG/L	05/24/2005
01113H CADMIUM R	<.2 UG/L	05/20/2005
01025H CADMIUM D	<.20 UG/L	05/20/2005
01114H LEAD TOT R	8.300 UG/L	05/20/2005
01049H LEAD D	<1.0 UG/L	05/20/2005
00515 TDS @105 C	340. MG/L	05/24/2005
01094A ZINC R	47.000 UG/L	05/24/2005
01090A ZINC D	14.000 UG/L	05/24/2005
00620A Nitrate-N	1.24 MG/L	05/24/2005
00935A POTASSIUM D	1.050 MG/L	05/24/2005
00939A POTASSIUM R	2.800 MG/L	05/24/2005
01009A BARIUM R	610.000 UG/L	05/24/2005
01005A BARIUM D	292.000 UG/L	05/24/2005
00978H ARSENIC R	4.400 UG/L	05/20/2005
01000H ARSENIC D	<4.0 UG/L	05/20/2005
00680 T ORG CARBON	2.54 MG/L	06/02/2005
32730D Phenols-Dist	10.23 UG/L	05/26/2005
00921A MAGNESIUM R	8.490 MG/L	05/24/2005
00925A MAGNESIUM D	5.600 MG/L	05/24/2005
01145H SELENIUM D	<7 UG/L	05/20/2005
00981H SELENIUM R	<7 UG/L	05/20/2005
00940A CHLORIDE	2.8 MG/L	06/03/2005

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Sample ID: 2119 120 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 02:00:00 PM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-12  
Reason: Routine Sampling  
  
Well purged till dry

Appearance: turbid

Laboratory Sample ID: I2005018588  
Standard Analysis: 210

COMPLETED

Legal Seal: E035914 Intact: YES  
Legal Seal: E035915 Intact: YES  
Legal Seal: E035916 Intact: YES  
Legal Seal: E035917 Intact: YES  
Legal Seal: E035918 Intact: YES  
Legal Seal: E035919 Intact: YES  
Legal Seal: F007201 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	4920.000 UG/L	05/24/2005
01046A IRON D	<20 UG/L	05/24/2005
00410 ALKALINITY	202.2 MG/L	05/20/2005
** Comment **	Alkalinity Measured to Endpoint 4.5	
00945A SULFATE T	32.2 MG/L	06/03/2005
70353 T ORG HALIDE	<5 UG/L	05/25/2005
00918A CALCIUM R	65.500 MG/L	05/24/2005
00915A CALCIUM D	61.400 MG/L	05/24/2005
00095 SPC @ 25.0 C	400.00 umhos/cm	05/20/2005
01040A COPPER D	<10 UG/L	05/24/2005
01119A COPPER R	20.000 UG/L	05/24/2005
01030H CHROMIUM D	<4 UG/L	05/25/2005
01118H CHROMIUM R	7.900 UG/L	05/25/2005
82079 TURBIDITY	213.90 NTU	05/24/2005
00610A AMMONIA-N T	<.02 MG/L	06/03/2005
00340 COD	<10.0 MG/L	06/03/2005



01075A SILVER D

<10 UG/L

05/24/2005

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Sample ID: 2119 120 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
01079A SILVER R	<10 UG/L	05/24/2005
00951 FLUORIDE T	<0.20 MG/L	05/26/2005
71890X MERCURY D	<1 UG/L	05/24/2005
71901X MERCURY R	<1 UG/L	05/24/2005
00923A SODIUM R	7.500 MG/L	05/24/2005
00930A SODIUM D	7.320 MG/L	05/24/2005
00403 pH	7.8 pH units	05/20/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	<10 UG/L	05/24/2005
01123A MANGANESE R	11500.000 UG/L	05/24/2005
01113H CADMIUM R	<.2 UG/L	05/25/2005
01025H CADMIUM D	<.20 UG/L	05/25/2005
01114H LEAD TOT R	3.600 UG/L	05/25/2005
01049H LEAD D	<1.0 UG/L	05/25/2005
00515 TDS @105 C	304. MG/L	05/24/2005
01094A ZINC R	29.000 UG/L	05/24/2005
01090A ZINC D	<10.0 UG/L	05/24/2005
00620A Nitrate-N	0.30 MG/L	05/24/2005
00935A POTASSIUM D	<1.00 MG/L	05/24/2005
00939A POTASSIUM R	2.160 MG/L	05/24/2005
01009A BARIUM R	410.000 UG/L	05/24/2005
01005A BARIUM D	157.000 UG/L	05/24/2005
00978H ARSENIC R	12.600 UG/L	05/25/2005
01000H ARSENIC D	5.100 UG/L	05/25/2005
00680 T ORG CARBON	1.13 MG/L	06/02/2005
32730D Phenols-Dist	<5.0 UG/L	05/26/2005
** Comment ** Possible Matrix Interference		
00921A MAGNESIUM R	15.200 MG/L	05/24/2005
00925A MAGNESIUM D	13.100 MG/L	05/24/2005
01145H SELENIUM D	<7 UG/L	05/25/2005
00981H SELENIUM R	<7 UG/L	05/25/2005
00940A CHLORIDE	2.0 MG/L	06/03/2005

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Sample ID: 2119 121 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 03:00:00 PM

County: Montgomery  
Municipality: Douglass Twp

State: PA

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water  
Ground Water

Location: MW-10  
Reason: Routine Sampling

Laboratory Sample ID: I2005018589  
Standard Analysis: 210

COMPLETED

Legal Seal: F007203 Intact: YES  
Legal Seal: F007204 Intact: YES  
Legal Seal: F007205 Intact: YES  
Legal Seal: F007206 Intact: YES  
Legal Seal: F007207 Intact: YES  
Legal Seal: F007208 Intact: YES  
Legal Seal: F007209 Intact: YES

Test/CAS# - Description	Reported Results	Completed
00980A IRON R	5490.000 UG/L	05/24/2005
01046A IRON D	22.000 UG/L	05/24/2005
00410 ALKALINITY	227.2 MG/L	05/20/2005
** Comment ** Alkalinity Measured to Endpoint 4.5		
00945A SULFATE T	<20.0 MG/L	06/03/2005
70353 T ORG HALIDE	<5 UG/L	05/25/2005
00918A CALCIUM R	75.900 MG/L	05/24/2005
00915A CALCIUM D	75.400 MG/L	05/24/2005
00095 SPC @ 25.0 C	450.00 umhos/cm	05/20/2005
01040A COPPER D	<10 UG/L	05/24/2005
01119A COPPER R	18.000 UG/L	05/24/2005
01030H CHROMIUM D	<4 UG/L	05/25/2005
01118H CHROMIUM R	7.300 UG/L	05/25/2005
82079 TURBIDITY	218.00 NTU	05/24/2005
00610A AMMONIA-N T	<.02 MG/L	06/03/2005
00340 COD	<10.0 MG/L	06/03/2005
01075A SILVER D	<10 UG/L	05/24/2005
01079A SILVER R	<10 UG/L	05/24/2005
00951 FLUORIDE T	<0.20 MG/L	05/26/2005
71890X MERCURY D	<1 UG/L	05/24/2005
71901X MERCURY R	<1 UG/L	05/24/2005

00923A SODIUM R

8.410 MG/L

05/24/2005

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Sample ID: 2119 121 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
00930A SODIUM D	7.940 MG/L	05/24/2005
00403 pH	7.2 pH units	05/20/2005
** Comment ** Time Limit For Test Exceeded		
01056A MANGANESE D	20.000 UG/L	05/24/2005
01123A MANGANESE R	226.000 UG/L	05/24/2005
01113H CADMIUM R	<.2 UG/L	05/25/2005
01025H CADMIUM D	<.20 UG/L	05/25/2005
01114H LEAD TOT R	2.700 UG/L	05/25/2005
01049H LEAD D	<1.0 UG/L	05/25/2005
00515 TDS @105 C	376. MG/L	05/24/2005
01094A ZINC R	21.000 UG/L	05/24/2005
01090A ZINC D	<10.0 UG/L	05/24/2005
00620A Nitrate-N	0.90 MG/L	05/24/2005
00935A POTASSIUM D	<1.00 MG/L	05/24/2005
00939A POTASSIUM R	2.510 MG/L	05/24/2005
01009A BARIUM R	478.000 UG/L	05/24/2005
01005A BARIUM D	267.000 UG/L	05/24/2005
00978H ARSENIC R	<4.0 UG/L	05/25/2005
01000H ARSENIC D	<4.0 UG/L	05/25/2005
00680 T ORG CARBON	2.60 MG/L	06/02/2005
32730D Phenols-Dist	<5.0 UG/L	06/09/2005
00921A MAGNESIUM R	13.700 MG/L	05/24/2005
00925A MAGNESIUM D	12.200 MG/L	05/24/2005
01145H SELENIUM D	<7 UG/L	05/25/2005
00981H SELENIUM R	<7 UG/L	05/25/2005
00940A CHLORIDE	1.5 MG/L	06/03/2005

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Sample ID: 2119 114 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 11:00:00 AM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: SMW-1  
Reason: Routine Sampling

Laboratory Sample ID: O2005001856 COMPLETED  
Suite: VOA-1

Legal Seal: E035865 Intact: YES  
Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.25 UG/L (U)	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	6.4 UG/L	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	0.25 UG/L (U)	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 114 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.98 UG/L	06/03/2005
71432 Benzene	0.25 UG/L (U)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	0.25 UG/L (U)	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.25 UG/L (U)	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.30 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.25 UG/L (U)	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.25 UG/L (U)	06/03/2005

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Sample ID: 2119 114 05/17/2005 Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005



ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Sample ID: 2119 115 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 12:30:00 PMCounty: Montgomery  
Municipality: Douglass Twp

State: PA

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BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
-----Sample Medium: Water /  
Ground WaterLocation: MW-7  
Reason: Routine SamplingLaboratory Sample ID: O2005001857  
Suite: VOA-1

COMPLETED

Legal Seal: E035873 Intact: YES  
Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.25 UG/L (U)	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	0.25 UG/L (U)	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	0.25 UG/L (U)	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 115 05/17/2005 Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.25 UG/L (U)	06/03/2005
71432 Benzene	0.25 UG/L (U)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	0.25 UG/L (U)	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.25 UG/L (U)	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.28 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.25 UG/L (U)	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.25 UG/L (U)	06/03/2005

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Land Recycling & Waste Management

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Sample ID: 2119 115 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005

ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Sample ID: 2119 116 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 02:00:00 PM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-8  
Reason: Routine Sampling

Laboratory Sample ID: O2005001858 COMPLETED  
Suite: VOA-1

Legal Seal: E035889 Intact: YES  
Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.38 UG/L	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	0.25 UG/L (U)	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	0.25 UG/L (U)	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 116 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.46 UG/L	06/03/2005
71432 Benzene	0.25 UG/L (U)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	0.77 UG/L	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	0.25 UG/L (U)	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.25 UG/L (U)	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.36 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.25 UG/L (U)	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.17 UG/L (JB)	06/03/2005

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Sample ID: 2119 116 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005



ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported.. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Sample ID: 2119 117 05/17/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/17/2005 01:30:00 PM

County: Montgomery  
Municipality: Douglass Twp

State: PA

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BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
-----

Sample Medium: Water  
Ground Water

Location: field blank  
Reason: Routine Sampling

Laboratory Sample ID: 02005001859  
Suite: VOA-1

COMPLETED

Legal Seal: E035881 Intact: YES  
Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.25 UG/L (U)	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	0.25 UG/L (U)	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	0.25 UG/L (U)	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 117 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.25 UG/L (U)	06/03/2005
71432 Benzene	0.25 UG/L (U)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	0.25 UG/L (U)	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.25 UG/L (U)	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.25 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.25 UG/L (U)	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.25 UG/L (U)	06/03/2005

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Land Recycling & Waste Management

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Sample ID: 2119 117 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005

ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

06/06/2005 12:30:02 AM

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Sample ID: 2119 124 05/17/2005

Status: COMPLETED

Collector: Jennifer A Wilson

Collected: 05/17/2005 08:45:00 AM

County: Montgomery

State: PA

Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water  
Ground Water

Location: AMW-1

Reason: Routine Sampling

Laboratory Sample ID: O2005001860  
Suite: VOA-1

COMPLETED

Legal Seal: E035849 Intact: YES

Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	11.5 UG/L	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.27 UG/L	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	2.6 UG/L	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	1.2 UG/L	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 124 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.25 UG/L (U)	06/03/2005
71432 Benzene	0.12 UG/L (J)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	38.7 UG/L	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	19.6 UG/L	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.61 UG/L	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.31 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.77 UG/L	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.18 UG/L (JB)	06/03/2005

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Sample ID: 2119 124 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005



ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

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Sample ID: 2119 125 05/17/2005

Status: COMPLETED

Collector: Jennifer A Wilson

Collected: 05/17/2005 09:30:00 AM

County: Montgomery

State: PA

Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL

300 MERKEL ROAD

GILBERTSVILLE PA 19525-

Sample Medium: Water

Ground Water

Location: MW-6

Reason: Routine Sampling

Laboratory Sample ID: O2005001861

COMPLETED

Suite: VOA-1

Legal Seal: E035857 Intact: YES

Sample run 2 days out of hold time due to instrument problems.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/03/2005
96128 1,2-Dibromo-3-chloropropane	2.0 UG/L (U)	06/03/2005
108883 Toluene	0.25 UG/L (U)	06/03/2005
100425 Styrene	0.50 UG/L (U)	06/03/2005
108907 Chlorobenzene	0.25 UG/L (U)	06/03/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/03/2005
127184 Tetrachloroethene	0.25 UG/L (U)	06/03/2005
98828 Isopropylbenzene	0.25 UG/L (U)	06/03/2005
156605 trans-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
106934 1,2-Dibromoethane	0.25 UG/L (U)	06/03/2005
109999 Tetrahydrofuran	0.25 UG/L (U)	06/03/2005
104518 n-Butylbenzene	0.25 UG/L (U)	06/03/2005
75014 Chloroethene	0.25 UG/L (U)	06/03/2005
95498 o-Chlorotoluene	0.25 UG/L (U)	06/03/2005
75274 Bromodichloromethane	0.25 UG/L (U)	06/03/2005
594207 2,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
563586 1,1-Dichloropropene	2.0 UG/L (U)	06/03/2005
120821 1,2,4-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
75150 Carbon Disulfide	0.25 UG/L (U)	06/03/2005
108101 MIBK	1.2 UG/L (U)	06/03/2005
98066 Tert-Butylbenzene	0.25 UG/L (U)	06/03/2005
75092 Methylene Chloride	0.25 UG/L (U)	06/03/2005

Sample ID: 2119 125 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75343 1,1-Dichloroethane	0.25 UG/L (U)	06/03/2005
74873 Chloromethane	0.25 UG/L (U)	06/03/2005
74839 Bromomethane	0.25 UG/L (U)	06/03/2005
95476 o-Xylene	0.25 UG/L (U)	06/03/2005
1634044 Methyl Tert-Butyl Ether	0.25 UG/L (U)	06/03/2005
71432 Benzene	0.25 UG/L (U)	06/03/2005
96184 1,2,3-Trichloropropane	0.25 UG/L (U)	06/03/2005
87616 1,2,3-Trichlorobenzene	0.25 UG/L (U)	06/03/2005
74953 Dibromomethane	0.25 UG/L (U)	06/03/2005
591786 2-Hexanone	10.0 UG/L (U)	06/03/2005
156592 cis-1,2-Dichloroethene	0.25 UG/L (U)	06/03/2005
10061015 cis-1,3-Dichloropropene	0.25 UG/L (U)	06/03/2005
67663 Chloroform	0.25 UG/L (U)	06/03/2005
56235 Carbon Tetrachloride	0.25 UG/L (U)	06/03/2005
71556 1,1,1-Trichloroethane	0.25 UG/L (U)	06/03/2005
135988 Sec-Butylbenzene	0.25 UG/L (U)	06/03/2005
100414 Ethylbenzene	0.25 UG/L (U)	06/03/2005
79005 1,1,2-Trichloroethane	0.25 UG/L (U)	06/03/2005
91203 Naphthalene	0.25 UG/L (U)	06/03/2005
87683 Hexachlorobutadiene	0.25 UG/L (U)	06/03/2005
78875 1,2-Dichloropropane	0.25 UG/L (U)	06/03/2005
107062 1,2-Dichloroethane	0.25 UG/L (U)	06/03/2005
106434 p-Chlorotoluene	0.25 UG/L (U)	06/03/2005
78933 MEK	1.2 UG/L (U)	06/03/2005
124481 Dibromochloromethane	0.25 UG/L (U)	06/03/2005
108678 1,3,5-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
10061026 trans-1,3-Dichloropropene	2.0 UG/L (U)	06/03/2005
95636 1,2,4-Trimethylbenzene	0.25 UG/L (U)	06/03/2005
75718 Dichlorodifluoromethane	0.25 UG/L (U)	06/03/2005
67641 Acetone	1.2 UG/L (U)	06/03/2005
98566 PCTFB	0.25 UG/L (U)	06/03/2005
79016 Trichloroethene	0.25 UG/L (U)	06/03/2005
142289 1,3-Dichloropropane	0.25 UG/L (U)	06/03/2005
75354 1,1-Dichloroethene	0.25 UG/L (U)	06/03/2005
75003 Chloroethane	0.25 UG/L (U)	06/03/2005
79345 1,1,2,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
108054 Vinyl Acetate	2.0 UG/L (U)	06/03/2005
75252 Bromoform	2.0 UG/L (U)	06/03/2005
99876 4-Isopropyltoluene	0.25 UG/L (U)	06/03/2005
95501 1,2-Dichlorobenzene	0.21 UG/L (JB)	06/03/2005
75694 Trichlorofluoromethane	0.25 UG/L (U)	06/03/2005
630206 1,1,1,2-Tetrachloroethane	0.25 UG/L (U)	06/03/2005
106467 1,4-Dichlorobenzene	0.25 UG/L (U)	06/03/2005

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Land Recycling & Waste Management

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Sample ID: 2119 125 05/17/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
541731 1,3-Dichlorobenzene	0.25 UG/L (U)	06/03/2005
108861 Bromobenzene	0.25 UG/L (U)	06/03/2005
103651 n-Propylbenzene	0.25 UG/L (U)	06/03/2005

# ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

06/10/2005 12:30:03 AM

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Analytical Report For  
Land Recycling & Waste Management

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Sample ID: 2119 118 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 09:30:00 AM

County: Montgomery  
Municipality: Douglass Twp

State: PA

-----  
BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
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Sample Medium: Water /  
Ground Water

Location: MW-5  
Reason: Routine Sampling

Well purged till dry

Appearance: turbid

Laboratory Sample ID: 02005001938  
Suite: VOA-1

COMPLETED

Legal Seal: E035897 Intact: YES  
Associated QC failed high, therefore any results may be bias high.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/08/2005
96128 1,2-Dibromo-3-chloropropane	0.50 UG/L (U)	06/08/2005
108883 Toluene	0.50 UG/L (U)	06/08/2005
100425 Styrene	0.50 UG/L (U)	06/08/2005
108907 Chlorobenzene	0.50 UG/L (U)	06/08/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/08/2005
127184 Tetrachloroethene	0.50 UG/L (U)	06/08/2005
98828 Isopropylbenzene	0.50 UG/L (U)	06/08/2005
156605 trans-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
106934 1,2-Dibromoethane	0.50 UG/L (U)	06/08/2005
109999 Tetrahydrofuran	1.7 UG/L (JB)	06/08/2005
104518 n-Butylbenzene	0.50 UG/L (U)	06/08/2005
75014 Chloroethene	0.50 UG/L (U)	06/08/2005
95498 o-Chlorotoluene	0.50 UG/L (U)	06/08/2005
75274 Bromodichloromethane	0.50 UG/L (U)	06/08/2005
594207 2,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
563586 1,1-Dichloropropene	0.50 UG/L (U)	06/08/2005

Sample ID: 2119 118 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
120821 1,2,4-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
75150 Carbon Disulfide	0.50 UG/L (U)	06/08/2005
108101 MIBK	2.5 UG/L (U)	06/08/2005
98066 Tert-Butylbenzene	0.50 UG/L (U)	06/08/2005
75092 Methylene Chloride	0.50 UG/L (U)	06/08/2005
75343 1,1-Dichloroethane	0.50 UG/L (U)	06/08/2005
74873 Chloromethane	0.50 UG/L (U)	06/08/2005
74839 Bromomethane	0.50 UG/L (U)	06/08/2005
95476 o-Xylene	0.50 UG/L (U)	06/08/2005
1634044 Methyl Tert-Butyl Ether	0.50 UG/L (U)	06/08/2005
71432 Benzene	0.50 UG/L (U)	06/08/2005
96184 1,2,3-Trichloropropane	0.50 UG/L (U)	06/08/2005
87616 1,2,3-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
74953 Dibromomethane	0.50 UG/L (U)	06/08/2005
591786 2-Hexanone	2.6 UG/L	06/08/2005
156592 cis-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
10061015 cis-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
67663 Chloroform	0.50 UG/L (U)	06/08/2005
56235 Carbon Tetrachloride	0.50 UG/L (U)	06/08/2005
71556 1,1,1-Trichloroethane	0.50 UG/L (U)	06/08/2005
135988 Sec-Butylbenzene	0.50 UG/L (U)	06/08/2005
100414 Ethylbenzene	0.50 UG/L (U)	06/08/2005
79005 1,1,2-Trichloroethane	0.50 UG/L (U)	06/08/2005
91203 Naphthalene	0.50 UG/L (U)	06/08/2005
87683 Hexachlorobutadiene	0.50 UG/L (U)	06/08/2005
78875 1,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
107062 1,2-Dichloroethane	0.50 UG/L (U)	06/08/2005
106434 p-Chlorotoluene	0.50 UG/L (U)	06/08/2005
78933 MEK	3.3 UG/L	06/08/2005
124481 Dibromochloromethane	0.50 UG/L (U)	06/08/2005
108678 1,3,5-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
10061026 trans-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
95636 1,2,4-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
75718 Dichlorodifluoromethane	0.50 UG/L (U)	06/08/2005
67641 Acetone	7.6 UG/L (J)	06/08/2005
98566 PCTFB	0.50 UG/L (U)	06/08/2005
79016 Trichloroethene	0.50 UG/L (U)	06/08/2005
142289 1,3-Dichloropropane	0.50 UG/L (U)	06/08/2005
75354 1,1-Dichloroethene	0.50 UG/L (U)	06/08/2005
75003 Chloroethane	0.50 UG/L (U)	06/08/2005
79345 1,1,2,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
108054 Vinyl Acetate	0.50 UG/L (U)	06/08/2005
75252 Bromoform	0.50 UG/L (U)	06/08/2005

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Land Recycling & Waste Management

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Sample ID: 2119 118 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
99876 4-Isopropyltoluene	0.50 UG/L (U)	06/08/2005
95501 1,2-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
75694 Trichlorofluoromethane	0.50 UG/L (U)	06/08/2005
630206 1,1,1,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
106467 1,4-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
541731 1,3-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
108861 Bromobenzene	0.50 UG/L (U)	06/08/2005
103651 n-Propylbenzene	0.50 UG/L (U)	06/08/2005



ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Sample ID: 2119 119 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 11:15:00 AM

County: Montgomery State: PA  
Municipality: Douglass Twp

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BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-  
-----

Sample Medium: Water /  
Ground Water

Location: MW-11  
Reason: Routine Sampling

Well purged till dry

Appearance: turbid

Laboratory Sample ID: 02005001939  
Suite: VOA-1

COMPLETED

Legal Seal: E035905 Intact: YES  
Associated QC failed high, therefore any results may be bias high.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/08/2005
96128 1,2-Dibromo-3-chloropropane	0.50 UG/L (U)	06/08/2005
108883 Toluene	0.50 UG/L (U)	06/08/2005
100425 Styrene	0.50 UG/L (U)	06/08/2005
108907 Chlorobenzene	0.50 UG/L (U)	06/08/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/08/2005
127184 Tetrachloroethene	0.50 UG/L (U)	06/08/2005
98828 Isopropylbenzene	0.50 UG/L (U)	06/08/2005
156605 trans-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
106934 1,2-Dibromoethane	0.50 UG/L (U)	06/08/2005
109999 Tetrahydrofuran	1.3 UG/L (JB)	06/08/2005
104518 n-Butylbenzene	0.50 UG/L (U)	06/08/2005
75014 Chloroethene	0.50 UG/L (U)	06/08/2005
95498 o-Chlorotoluene	0.50 UG/L (U)	06/08/2005
75274 Bromodichloromethane	0.50 UG/L (U)	06/08/2005
594207 2,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
563586 1,1-Dichloropropene	0.50 UG/L (U)	06/08/2005

Sample ID: 2119 119 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
120821 1,2,4-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
75150 Carbon Disulfide	0.50 UG/L (U)	06/08/2005
108101 MIBK	2.5 UG/L (U)	06/08/2005
98066 Tert-Butylbenzene	0.50 UG/L (U)	06/08/2005
75092 Methylene Chloride	0.50 UG/L (U)	06/08/2005
75343 1,1-Dichloroethane	0.50 UG/L (U)	06/08/2005
74873 Chloromethane	0.50 UG/L (U)	06/08/2005
74839 Bromomethane	0.50 UG/L (U)	06/08/2005
95476 o-Xylene	0.50 UG/L (U)	06/08/2005
1634044 Methyl Tert-Butyl Ether	0.50 UG/L (U)	06/08/2005
71432 Benzene	0.50 UG/L (U)	06/08/2005
96184 1,2,3-Trichloropropane	0.50 UG/L (U)	06/08/2005
87616 1,2,3-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
74953 Dibromomethane	0.50 UG/L (U)	06/08/2005
591786 2-Hexanone	2.5 UG/L (U)	06/08/2005
156592 cis-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
10061015 cis-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
67663 Chloroform	0.50 UG/L (U)	06/08/2005
56235 Carbon Tetrachloride	0.50 UG/L (U)	06/08/2005
71556 1,1,1-Trichloroethane	0.50 UG/L (U)	06/08/2005
135988 Sec-Butylbenzene	0.50 UG/L (U)	06/08/2005
100414 Ethylbenzene	0.50 UG/L (U)	06/08/2005
79005 1,1,2-Trichloroethane	0.50 UG/L (U)	06/08/2005
91203 Naphthalene	0.50 UG/L (U)	06/08/2005
87683 Hexachlorobutadiene	0.50 UG/L (U)	06/08/2005
78875 1,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
107062 1,2-Dichloroethane	0.50 UG/L (U)	06/08/2005
106434 p-Chlorotoluene	0.50 UG/L (U)	06/08/2005
78933 MEK	2.5 UG/L (U)	06/08/2005
124481 Dibromochloromethane	0.50 UG/L (U)	06/08/2005
108678 1,3,5-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
10061026 trans-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
95636 1,2,4-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
75718 Dichlorodifluoromethane	0.50 UG/L (U)	06/08/2005
67641 Acetone	4.0 UG/L (J)	06/08/2005
98566 PCTFB	0.50 UG/L (U)	06/08/2005
79016 Trichloroethene	0.50 UG/L (U)	06/08/2005
142289 1,3-Dichloropropane	0.50 UG/L (U)	06/08/2005
75354 1,1-Dichloroethene	0.50 UG/L (U)	06/08/2005
75003 Chloroethane	0.50 UG/L (U)	06/08/2005
79345 1,1,2,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
108054 Vinyl Acetate	0.50 UG/L (U)	06/08/2005
75252 Bromoform	0.50 UG/L (U)	06/08/2005

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Sample ID: 2119 119 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
99876 4-Isopropyltoluene	0.50 UG/L (U)	06/08/2005
95501 1,2-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
75694 Trichlorofluoromethane	0.50 UG/L (U)	06/08/2005
630206 1,1,1,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
106467 1,4-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
541731 1,3-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
108861 Bromobenzene	0.50 UG/L (U)	06/08/2005
103651 n-Propylbenzene	0.50 UG/L (U)	06/08/2005

# ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

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Sample ID: 2119 121 05/19/2005

Status: COMPLETED

Collector: Jennifer A Wilson

Collected: 05/19/2005 03:00:00 PM

County: Montgomery

State: PA

Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL

300 MERKEL ROAD

GILBERTSVILLE

PA 19525-

Sample Medium: Water

Ground Water

Location: MW-10

Reason: Routine Sampling

Laboratory Sample ID: O2005001941

COMPLETED

Suite: VOA-1

Legal Seal: F007202 Intact: YES

Associated QC failed high, therefore any results may be bias high. 1  
SS recovery failed high.

Test/CAS#	Description	Reported Results	Completed
75650	t-Butyl alcohol	2.5 UG/L (U)	06/08/2005
96128	1,2-Dibromo-3-chloropropane	0.50 UG/L (U)	06/08/2005
108883	Toluene	0.50 UG/L (U)	06/08/2005
100425	Styrene	0.50 UG/L (U)	06/08/2005
108907	Chlorobenzene	0.50 UG/L (U)	06/08/2005
108383	m/p-Xylene	1.0 UG/L (U)	06/08/2005
127184	Tetrachloroethene	0.50 UG/L (U)	06/08/2005
98828	Isopropylbenzene	0.50 UG/L (U)	06/08/2005
156605	trans-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
106934	1,2-Dibromoethane	0.50 UG/L (U)	06/08/2005
109999	Tetrahydrofuran	1.0 UG/L (JB)	06/08/2005
104518	n-Butylbenzene	0.50 UG/L (U)	06/08/2005
75014	Chloroethene	0.50 UG/L (U)	06/08/2005
95498	o-Chlorotoluene	0.50 UG/L (U)	06/08/2005
75274	Bromodichloromethane	0.50 UG/L (U)	06/08/2005
594207	2,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
563586	1,1-Dichloropropene	0.50 UG/L (U)	06/08/2005
120821	1,2,4-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
75150	Carbon Disulfide	0.50 UG/L (U)	06/08/2005
108101	MIBK	2.5 UG/L (U)	06/08/2005
98066	Tert-Butylbenzene	0.50 UG/L (U)	06/08/2005

Sample ID: 2119 121 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75092 Methylene Chloride	0.50 UG/L (U)	06/08/2005
75343 1,1-Dichloroethane	0.50 UG/L (U)	06/08/2005
74873 Chloromethane	0.50 UG/L (U)	06/08/2005
74839 Bromomethane	0.50 UG/L (U)	06/08/2005
95476 o-Xylene	0.50 UG/L (U)	06/08/2005
1634044 Methyl Tert-Butyl Ether	0.50 UG/L (U)	06/08/2005
71432 Benzene	0.50 UG/L (U)	06/08/2005
96184 1,2,3-Trichloropropane	0.50 UG/L (U)	06/08/2005
87616 1,2,3-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
74953 Dibromomethane	0.50 UG/L (U)	06/08/2005
591786 2-Hexanone	2.5 UG/L (U)	06/08/2005
156592 cis-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
10061015 cis-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
67663 Chloroform	0.50 UG/L (U)	06/08/2005
56235 Carbon Tetrachloride	0.50 UG/L (U)	06/08/2005
71556 1,1,1-Trichloroethane	0.50 UG/L (U)	06/08/2005
135988 Sec-Butylbenzene	0.50 UG/L (U)	06/08/2005
100414 Ethylbenzene	0.50 UG/L (U)	06/08/2005
79005 1,1,2-Trichloroethane	0.50 UG/L (U)	06/08/2005
91203 Naphthalene	0.50 UG/L (U)	06/08/2005
87683 Hexachlorobutadiene	0.50 UG/L (U)	06/08/2005
78875 1,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
107062 1,2-Dichloroethane	0.50 UG/L (U)	06/08/2005
106434 p-Chlorotoluene	0.50 UG/L (U)	06/08/2005
78933 MEK	2.5 UG/L (U)	06/08/2005
124481 Dibromochloromethane	0.50 UG/L (U)	06/08/2005
108678 1,3,5-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
10061026 trans-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
95636 1,2,4-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
75718 Dichlorodifluoromethane	0.50 UG/L (U)	06/08/2005
67641 Acetone	4.1 UG/L (J)	06/08/2005
98566 PCTFB	0.50 UG/L (U)	06/08/2005
79016 Trichloroethene	0.50 UG/L (U)	06/08/2005
142289 1,3-Dichloropropane	0.50 UG/L (U)	06/08/2005
75354 1,1-Dichloroethene	0.50 UG/L (U)	06/08/2005
75003 Chloroethane	0.50 UG/L (U)	06/08/2005
79345 1,1,2,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
108054 Vinyl Acetate	0.50 UG/L (U)	06/08/2005
75252 Bromoform	0.50 UG/L (U)	06/08/2005
99876 4-Isopropyltoluene	0.50 UG/L (U)	06/08/2005
95501 1,2-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
75694 Trichlorofluoromethane	0.50 UG/L (U)	06/08/2005
630206 1,1,1,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005

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Sample ID: 2119 121 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
106467 1,4-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
541731 1,3-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
108861 Bromobenzene	0.50 UG/L (U)	06/08/2005
103651 n-Propylbenzene	0.50 UG/L (U)	06/08/2005



ORGANICS LABORATORY QUALIFIERS  
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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

Sample ID: 2119 122 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 04:00:00 PM

County: Montgomery State: PA  
Municipality: Douglass Twp

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water /  
Ground Water

Location: MW-9  
Reason: Routine Sampling

Sample taken before well was completely purged.

Laboratory Sample ID: 02005001942 COMPLETED  
Suite: VOA-1

Legal Seal: F007210 Intact: YES  
Associated QC failed high, therefore any results may be bias high. 1  
SS recovery failed high.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/08/2005
96128 1,2-Dibromo-3-chloropropane	0.50 UG/L (U)	06/08/2005
108883 Toluene	0.50 UG/L (U)	06/08/2005
100425 Styrene	0.50 UG/L (U)	06/08/2005
108907 Chlorobenzene	0.50 UG/L (U)	06/08/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/08/2005
127184 Tetrachloroethene	0.50 UG/L (U)	06/08/2005
98828 Isopropylbenzene	0.50 UG/L (U)	06/08/2005
156605 trans-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
106934 1,2-Dibromoethane	0.50 UG/L (U)	06/08/2005
109999 Tetrahydrofuran	0.77 UG/L (JB)	06/08/2005
104518 n-Butylbenzene	0.50 UG/L (U)	06/08/2005
75014 Chloroethene	0.50 UG/L (U)	06/08/2005
95498 o-Chlorotoluene	0.50 UG/L (U)	06/08/2005
75274 Bromodichloromethane	0.50 UG/L (U)	06/08/2005
594207 2,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
563586 1,1-Dichloropropene	0.50 UG/L (U)	06/08/2005
120821 1,2,4-Trichlorobenzene	0.50 UG/L (U)	06/08/2005

Sample ID: 2119 122 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75150 Carbon Disulfide	0.50 UG/L (U)	06/08/2005
108101 MIBK	2.5 UG/L (U)	06/08/2005
98066 Tert-Butylbenzene	0.50 UG/L (U)	06/08/2005
75092 Methylene Chloride	0.50 UG/L (U)	06/08/2005
75343 1,1-Dichloroethane	0.50 UG/L (U)	06/08/2005
74873 Chloromethane	0.50 UG/L (U)	06/08/2005
74839 Bromomethane	0.50 UG/L (U)	06/08/2005
95476 o-Xylene	0.50 UG/L (U)	06/08/2005
1634044 Methyl Tert-Butyl Ether	0.50 UG/L (U)	06/08/2005
71432 Benzene	0.50 UG/L (U)	06/08/2005
96184 1,2,3-Trichloropropane	0.50 UG/L (U)	06/08/2005
87616 1,2,3-Trichlorobenzene	0.50 UG/L (U)	06/08/2005
74953 Dibromomethane	0.50 UG/L (U)	06/08/2005
591786 2-Hexanone	2.5 UG/L (U)	06/08/2005
156592 cis-1,2-Dichloroethene	0.50 UG/L (U)	06/08/2005
10061015 cis-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
67663 Chloroform	0.50 UG/L (U)	06/08/2005
56235 Carbon Tetrachloride	0.50 UG/L (U)	06/08/2005
71556 1,1,1-Trichloroethane	0.50 UG/L (U)	06/08/2005
135988 Sec-Butylbenzene	0.50 UG/L (U)	06/08/2005
100414 Ethylbenzene	0.50 UG/L (U)	06/08/2005
79005 1,1,2-Trichloroethane	0.50 UG/L (U)	06/08/2005
91203 Naphthalene	0.50 UG/L (U)	06/08/2005
87683 Hexachlorobutadiene	0.50 UG/L (U)	06/08/2005
78875 1,2-Dichloropropane	0.50 UG/L (U)	06/08/2005
107062 1,2-Dichloroethane	0.50 UG/L (U)	06/08/2005
106434 p-Chlorotoluene	0.50 UG/L (U)	06/08/2005
78933 MEK	2.5 UG/L (U)	06/08/2005
124481 Dibromochloromethane	0.50 UG/L (U)	06/08/2005
108678 1,3,5-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
10061026 trans-1,3-Dichloropropene	0.50 UG/L (U)	06/08/2005
95636 1,2,4-Trimethylbenzene	0.50 UG/L (U)	06/08/2005
75718 Dichlorodifluoromethane	0.50 UG/L (U)	06/08/2005
67641 Acetone	3.0 UG/L (J)	06/08/2005
98566 PCTFB	0.50 UG/L (U)	06/08/2005
79016 Trichloroethene	0.50 UG/L (U)	06/08/2005
142289 1,3-Dichloropropane	0.50 UG/L (U)	06/08/2005
75354 1,1-Dichloroethene	0.50 UG/L (U)	06/08/2005
75003 Chloroethane	0.50 UG/L (U)	06/08/2005
79345 1,1,2,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
108054 Vinyl Acetate	0.50 UG/L (U)	06/08/2005
75252 Bromoform	0.50 UG/L (U)	06/08/2005
99876 4-Isopropyltoluene	0.50 UG/L (U)	06/08/2005

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Sample ID: 2119 122 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
95501 1,2-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
75694 Trichlorofluoromethane	0.50 UG/L (U)	06/08/2005
630206 1,1,1,2-Tetrachloroethane	0.50 UG/L (U)	06/08/2005
106467 1,4-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
541731 1,3-Dichlorobenzene	0.50 UG/L (U)	06/08/2005
108861 Bromobenzene	0.50 UG/L (U)	06/08/2005
103651 n-Propylbenzene	0.50 UG/L (U)	06/08/2005

# ORGANICS LABORATORY QUALIFIERS

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- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines, PCB's, etc). The reported value is the average of the two results.
- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

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0211905192005120-55  
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Sample ID: 2119 120 05/19/2005 Status: COMPLETED

Collector: Jennifer A Wilson  
Collected: 05/19/2005 02:00:00 PM

County: Montgomery  
Municipality: Douglass Twp

State: PA

BOYERTOWN SANITARY LANDFILL  
300 MERKEL ROAD  
GILBERTSVILLE PA 19525-

Sample Medium: Water  
Ground Water

Location: MW-12  
Reason: Routine Sampling  
well purged till dry

Appearance: turbid

Laboratory Sample ID: 02005001940  
Suite: VOA-1

COMPLETED

Legal Seal: E035913 Intact: YES  
Associated QC failed high, therefore any results may be bias high.  
Sample was not properly preserved, residual chlorine present.

Test/CAS# - Description	Reported Results	Completed
75650 t-Butyl alcohol	2.5 UG/L (U)	06/14/2005
96128 1,2-Dibromo-3-chloropropane	0.50 UG/L (U)	06/14/2005
108883 Toluene	0.50 UG/L (U)	06/14/2005
100425 Styrene	0.50 UG/L (U)	06/14/2005
108907 Chlorobenzene	0.50 UG/L (U)	06/14/2005
108383 m/p-Xylene	1.0 UG/L (U)	06/14/2005
127184 Tetrachloroethene	0.50 UG/L (U)	06/14/2005
98828 Isopropylbenzene	0.50 UG/L (U)	06/14/2005
156605 trans-1,2-Dichloroethene	0.50 UG/L (U)	06/14/2005
106934 1,2-Dibromoethane	0.50 UG/L (U)	06/14/2005
109999 Tetrahydrofuran	1.2 UG/L (JB)	06/14/2005
104518 n-Butylbenzene	0.50 UG/L (U)	06/14/2005
75014 Chloroethene	0.50 UG/L (U)	06/14/2005
95498 o-Chlorotoluene	0.50 UG/L (U)	06/14/2005
75274 Bromodichloromethane	0.50 UG/L (U)	06/14/2005
594207 2,2-Dichloropropane	0.50 UG/L (U)	06/14/2005

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Sample ID: 2119 120 05/19/2005 Status: COMPLETED

Test/CAS# - Description

Reported Results

Completed

563586	1,1-Dichloropropene	0.50 UG/L	(U)	06/14/2005
120821	1,2,4-Trichlorobenzene	0.50 UG/L	(U)	06/14/2005
75150	Carbon Disulfide	0.50 UG/L	(U)	06/14/2005
108101	MIBK	2.5 UG/L	(U)	06/14/2005
98066	Tert-Butylbenzene	0.50 UG/L	(U)	06/14/2005
75092	Methylene Chloride	0.50 UG/L	(U)	06/14/2005
75343	1,1-Dichloroethane	0.50 UG/L	(U)	06/14/2005
74873	Chloromethane	0.50 UG/L	(U)	06/14/2005
74839	Bromomethane	0.50 UG/L	(U)	06/14/2005
95476	o-Xylene	0.50 UG/L	(U)	06/14/2005
1634044	Methyl Tert-Butyl Ether	0.50 UG/L	(U)	06/14/2005
71432	Benzene	0.50 UG/L	(U)	06/14/2005
96184	1,2,3-Trichloropropane	0.50 UG/L	(U)	06/14/2005
87616	1,2,3-Trichlorobenzene	0.50 UG/L	(U)	06/14/2005
74953	Dibromomethane	0.50 UG/L	(U)	06/14/2005
591786	2-Hexanone	2.5 UG/L	(U)	06/14/2005
156592	cis-1,2-Dichloroethene	0.50 UG/L	(U)	06/14/2005
10061015	cis-1,3-Dichloropropene	0.50 UG/L	(U)	06/14/2005
67663	Chloroform	0.50 UG/L	(U)	06/14/2005
56235	Carbon Tetrachloride	0.50 UG/L	(U)	06/14/2005
71556	1,1,1-Trichloroethane	0.50 UG/L	(U)	06/14/2005
135988	Sec-Butylbenzene	0.50 UG/L	(U)	06/14/2005
100414	Ethylbenzene	0.50 UG/L	(U)	06/14/2005
79005	1,1,2-Trichloroethane	0.50 UG/L	(U)	06/14/2005
91203	Naphthalene	0.50 UG/L	(U)	06/14/2005
87683	Hexachlorobutadiene	0.50 UG/L	(U)	06/14/2005
78875	1,2-Dichloropropane	0.50 UG/L	(U)	06/14/2005
107062	1,2-Dichloroethane	0.50 UG/L	(U)	06/14/2005
106434	p-Chlorotoluene	0.50 UG/L	(U)	06/14/2005
78933	MEK	2.5 UG/L	(U)	06/14/2005
124481	Dibromochloromethane	0.50 UG/L	(U)	06/14/2005
108678	1,3,5-Trimethylbenzene	0.50 UG/L	(U)	06/14/2005
10061026	trans-1,3-Dichloropropene	0.50 UG/L	(U)	06/14/2005
95636	1,2,4-Trimethylbenzene	0.50 UG/L	(U)	06/14/2005
75718	Dichlorodifluoromethane	0.50 UG/L	(U)	06/14/2005
67641	Acetone	3.7 UG/L	(J)	06/14/2005
98566	PCTFB	0.50 UG/L	(U)	06/14/2005
79016	Trichloroethene	0.50 UG/L	(U)	06/14/2005
142289	1,3-Dichloropropane	0.50 UG/L	(U)	06/14/2005
75354	1,1-Dichloroethene	0.50 UG/L	(U)	06/14/2005
75003	Chloroethane	0.50 UG/L	(U)	06/14/2005
79345	1,1,2,2-Tetrachloroethane	0.50 UG/L	(U)	06/14/2005
108054	Vinyl Acetate	0.50 UG/L	(U)	06/14/2005

06/16/2005 12:30:04 AM

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Sample ID: 2119 120 05/19/2005

Status: COMPLETED

Test/CAS# - Description	Reported Results	Completed
75252	Bromoform	0.50 UG/L (U) 06/14/2005
99876	4-Isopropyltoluene	0.50 UG/L (U) 06/14/2005
95501	1,2-Dichlorobenzene	0.50 UG/L (U) 06/14/2005
75694	Trichlorofluoromethane	0.50 UG/L (U) 06/14/2005
630206	1,1,1,2-Tetrachloroethane	0.50 UG/L (U) 06/14/2005
106467	1,4-Dichlorobenzene	0.50 UG/L (U) 06/14/2005
541731	1,3-Dichlorobenzene	0.50 UG/L (U) 06/14/2005

108861  
103651

Bromobenzene  
n-Propylbenzene

0211905192005120-55

0.50 UG/L (U)  
0.50 UG/L (U)

06/14/2005  
06/14/2005

ORGANICS LABORATORY QUALIFIERS

- U - Indicates compound was analyzed for but not detected. The sample quantitation limit is reported.
- J - Indicates an estimated value, below the quantification limit, but above the method detection limit.
- N - Indicates presumptive evidence of a compound.
- B - This flag is used when the analyte is found in the associated blank as well as in the sample.
- E - This flag identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.
- P - This flag is used with a target analyte when there is greater than a 25% difference between the results obtained from the primary and confirmation columns for dual column analysis methods. (ie, pesticides, triazines,



0211905192005120-55

PCB's, etc). The reported value is the average of the two results.

- Q - This flag identifies the average of multiple results from multiple analysis, or the average of the averages of dual column analysis methods.
- - (Underline) - The compound is present at the amount reported. No flag.
- X - Non-target analytes co-elute with compound. Identification unable to be confirmed.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION III  
1650 Arch Street  
Philadelphia, Pennsylvania 19103-2029

**SUBJECT:** Review of Boyertown Sanitary Landfill      **DATE:** 11/01/11  
PAD 0048603005 Comprehensive  
Groundwater Monitoring Evaluation (CME)  
Report by PADEP (SERO) dated September  
8, 2011

**FROM:** Michael P. Cramer  
LCD OTAS (3LC10)

**TO:** Paul Gotthold, Associate Director  
Office of Pennsylvania Remediation (3LC30)

This facility is listed as a significant non-complier in the EPA Inspection and Enforcement Summary of the ECHO website ([www.epa-echo.gov](http://www.epa-echo.gov)) since 2007. Interestingly, the ECHO website compliance monitoring history for the facility lists a CME inspection dated 04/07/2011 as finding violations or compliance issues. The very next entry in the table lists a CME performed on 04/12/2011 as finding no violations or compliance issues.

I don't know how this information gets into the ECO database, but the discrepancy noted above should be addressed by the appropriate agency.

The CME performed by PADEP, on 04/07/2011, states that the owner has not performed the required quarterly ground water monitoring for the facility since 2001. Consequent to the SNC status of this facility, the PADEP confiscated the owner's bond money so that necessary maintenance work could be performed.

On April 7, 2011, PADEP observed seeps along the northern edge of the landfill. PADEP sample results indicated unacceptable levels of ammonia and BTEX, along with explosive levels of methane gas in the collection system along the south side of the landfill.

A Ground Water Environmental Indicators Determination form completed by PADEP in September of 2000 indicated ground water under control at that time due to decreased levels of TCE in ground water sample results and TCE below MSC in surface water samples of Minister Creek.

PADEP's Hazardous Site Cleanup Program will perform investigations at the facility to determine what remedial actions must be taken to bring the facility into compliance with waste regulations.

